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NUMERICAL EVALUATION OF THE WAKE-SURVEY EQUATIONS

FOR SUBSONIC FLOW INCLUDING THE EFFECT

OF ENERGY ADDITION

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WASHINGTON

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SUMMARY

Direct-reading tables and charts are presented for determining the drag or thrust coefficients from wake-survey measurements in the subsonic speed range. For flows wherein no energy is added, the point drag coefficient is shown to be an explicit function of the stream Mach number M_0 , the static-pressure coefficient at the wake station P_1 , and the total-pressure-loss coefficient $\Delta H/q_0$, where ΔH is the total-pressure loss and q_0 is the stream dynamic pressure. Values of the point drag coefficient are tabulated for a wide range of values of these parameters. Inasmuch as the tabulated coefficients (either drag or thrust) represent the point values, which are independent of the integration of the wake, the charts or tables in the form presented are general in application.

For flows wherein energy is added, such as flows behind propellers or heated radiators, an additional parameter, which is a function of the stagnation-temperature rise, must be considered. Values of the point drag coefficient that include the effects of the addition of energy are tabulated.

INTRODUCTION

In the field of aeronautical research, wake pressure surveys have been used increasingly for determining profile drag, internal drag, jet thrust, and related factors. The evaluation of the drag or thrust from

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pressure surveys is based on the solution of the momentum equation. For high-speed flows, in which the air must be considered compressible, the evaluation of the drag or thrust must include the variation in the density of the air; this variation in the density necessarily complicates the solution of the momentum equation. For flows wherein energy has been added, the density variation is of importance even for the low-speed conditions.

Because a large number of pressure readings are usually required to make a complete wake survey, it is essential that solutions of the wake-survey equations for all types of flow be presented in a form to permit rapid and accurate computation. Various simplifying techniques have been developed for evaluation of the drag coefficient from wake pressure measurements by means of charts or tables, but these methods have required excessive interpolation or computation due to the form of the parameters employed. When simplifying assumptions as to the shape of the wake profile and the constancy of the static pressure across the wake are made, integration techniques may be combined with the solution of the wake-survey equations (references 1 and 2) to reduce greatly the required computation. This method has been found useful in determining the section profile-drag coefficients of airfoils; however, such a method is not general in application and is limited by the original assumptions of uniform static pressure and a definite wake profile.

The method found to be most generally applicable at the Langley 8-foot high-speed tunnel consists in the point-by-point evaluation of the drag coefficient by means of direct-reading charts with the final integration performed in a separate step. Facility of evaluation of the drag coefficient is provided in that the point-by-point values can be determined from simple charts. The charts require no assumptions as to wake profiles or pressure gradients. The flexibility required for application to both two- and three-dimensional flows is provided by performing the integration in a separate step. In this report the solution of the wake equations has been developed for both isoenergetic flows (constant total energy) and flows wherein energy has been added; thus the equations are generally applicable to flows behind airfoils, propellers, and radiators. The fundamental principles may be applied to the determination of the thrust from jet units; however, consideration must be given to the change in the value of the ratio of specific heats and the momentum of the fuel.

SYMBOLS

| | |
|------------------------|--|
| a | speed of sound, feet per second |
| A | area, square feet |
| A_R | reference area, square feet |
| C_D | drag coefficient $\left(\frac{D}{q_o A_R} \right)$ |
| c | chord, feet |
| c_d | section profile-drag coefficient |
| c_d' | point drag coefficient |
| c_p | specific heat at constant pressure (for air, 0.24 Btu/lb/°F) |
| D | drag, pounds |
| E | energy added, foot-pounds per second |
| F_c | compressibility factor $\left(\frac{H - p}{q} \right)$ |
| g | acceleration of gravity (32.2 ft/sec ²) |
| H | total pressure, pounds per square foot |
| $\frac{\Delta H}{q_o}$ | total-pressure-loss coefficient $\left(\frac{H_o - H}{q_o} \right)$ |
| J | mechanical equivalent of heat (778 ft-lb/Btu) |
| K | energy-input factor $\left(\frac{E}{J c_p g m T_o} \right)$ |
| M | Mach number $\left(\frac{V}{a} \right)$ |
| m | mass flow rate, slugs per second (ρAV) |
| p | static pressure, pounds per square foot absolute |
| P_1 | static-pressure coefficient $\left(\frac{p_1 - p_o}{q_o} \right)$ |

| | |
|-------------|---|
| q | dynamic pressure $\left(\frac{1}{2}\rho v^2\right)$ |
| T | static temperature, °F absolute |
| T' | stagnation temperature, °F absolute |
| $\Delta T'$ | stagnation-temperature rise, °F $(T_1' - T_0')$ |
| V | velocity, feet per second |
| y | distance across wake, feet |
| ρ | density, slugs per cubic foot |
| γ | ratio of specific heats (for air, 1.400) |

Subscripts 0, 1, and 2 refer to the flow stations designated in figure 1.

DISCUSSION OF THEORY AND METHODS

Fundamental Relations

The detailed solutions of the basic wake-survey equations for flows with and without the addition of energy have been presented in reference 3. A theoretical analysis of the basic assumptions required for the solution of the wake-survey equations for isoenergetic flows has been presented in reference 4.

The basic form of the drag equation as derived from the momentum relation is

$$D = \int_{\text{wake}} \rho_1 V_1 (V_0 - V_2) dA_1$$

Then

$$\begin{aligned}
 C_D &= \frac{2}{A_R} \int_{\text{wake}} \frac{\rho_1 v_1}{\rho_o v_o^2} (v_o - v_2) dA_1 \\
 &= \frac{2}{A_R} \int_{\text{wake}} \frac{\rho_1 v_1}{\rho_o v_o} \left(1 - \frac{v_2}{v_o}\right) dA_1 \\
 &= \frac{2}{A_R} \int_{\text{wake}} \left(\frac{q_1}{q_o}\right)^{1/2} \left(\frac{\rho_1}{\rho_o}\right)^{1/2} \left(\frac{\rho_o}{\rho_2}\right)^{1/2} \left[\left(\frac{\rho_2}{\rho_o}\right)^{1/2} - \left(\frac{\rho_2}{\rho_o}\right)^{1/2} \frac{v_2}{v_o} \right] dA_1 \\
 &= \frac{2}{A_R} \int_{\text{wake}} \left(\frac{\rho_1}{\rho_2}\right)^{1/2} \left(\frac{q_1}{q_o}\right)^{1/2} \left[\left(\frac{\rho_2}{\rho_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2} \right] dA_1 \quad (1)
 \end{aligned}$$

With the usual assumption that the total pressure at station 2 (where $p_2 = p_o$) is equal to the total pressure at station 1, the drag coefficient can be evaluated as indicated in the appendix. The numerical solution of equation (1), however, is difficult and requires excessive computation for direct use.

For convenience in presenting and discussing the solution of equation (1) the point drag coefficient is defined as

$$c_{d'} = 2 \left(\frac{\rho_1}{\rho_2}\right)^{1/2} \left(\frac{q_1}{q_o}\right)^{1/2} \left[\left(\frac{\rho_2}{\rho_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2} \right] \quad (2)$$

Negative values of the point drag coefficient indicate that the system is producing thrust.

Isoenergetic Flows

Isoenergetic flows are found over aerodynamic bodies or through internal-flow systems when no appreciable change in stagnation temperature occurs. An analysis of the terms constituting the point drag coefficient for isoenergetic flows indicates that the point drag coefficient is an explicit function of the free-stream Mach number M_0 , the static-pressure coefficient in the wake P_1 , and the total-pressure-loss coefficient $\Delta H/q_0$.

The pressure coefficients used are merely an expression of the measured data in coefficient form. Because the values of these parameters can be easily determined from the test data, their use provides a convenient and direct method for evaluation of the point drag coefficient. An explicit expression for the point drag coefficient in terms of the parameters M_0 , P_1 , and $\Delta H/q_0$ is complicated; but the coefficient can be easily determined by usual methods for given values of these parameters (see appendix).

Values of the point drag coefficient for a wide range of values of pressure coefficients P_1 and $\Delta H/q_0$ and for given values of stream Mach number M_0 are presented in table I. The range of total-pressure-loss coefficients has been extended into the negative region (which indicates a total-pressure increase) to permit evaluation under conditions of low energy input approaching isoenergetic flow. The application of table I to flows wherein energy has been added will be discussed in a later section. A large range of positive values of P_1 has been included to permit computation of internal duct flows for which the static-pressure coefficient may approach unity.

Other forms of the parameters and other methods of presentation than those used in table I may be more suitable for certain applications. Instead of Mach number M_0 , the pressure ratios $\frac{H_0 - p_0}{p_0}$, $\frac{H_0 - p_0}{H_0}$, or $\frac{p_0}{H_0}$ may be used; the pressure coefficients P_1 and $\frac{\Delta H}{q_0}$ may be replaced by $\frac{p_1 - p_0}{H_0 - p_0}$ and $\frac{H_0 - H_1}{H_0 - p_0}$,

respectively. The two parameters $\frac{p_1 - p_o}{H_o - p_o}$ and $\frac{H_o - H_1}{H_o - p_o}$ have an advantage when they can be determined directly from the measured wake and stream pressures. Tables and charts of the point drag coefficient for isoenergetic flow in terms of these two parameters are presented in reference 5 with charts and tables for rapid evaluation by an approximate method.

Flows Wherein Energy Is Added

The fundamental relations expressed in equation (1) are correct for the evaluation of the drag or thrust coefficient for flows wherein energy has been added, such as flows through radiators or propellers. The evaluation of the density ratio ρ_2/ρ_o , however, involves an added parameter that is a function of the energy input. The evaluation of the density ratio ρ_2/ρ_o as developed in appendix B of reference 3 becomes

$$\frac{\rho_2}{\rho_o} = \frac{1 + \frac{\gamma - 1}{2} M_o^2 \frac{q_2}{q_o}}{1 + \frac{\gamma - 1}{2} M_o^2 + \frac{E}{Jc_p g m T_o}}$$

In order to determine the drag coefficient from equation (1) for flow conditions wherein energy has been added, an additional parameter $\frac{E}{Jc_p g m T_o}$ must be determined; this parameter is designated K.

An inspection of the terms constituting the point drag coefficient (equation (2)) indicates that the quantity $2\left(\frac{p_1}{\rho_2}\right)^{1/2}\left(\frac{q_1}{q_o}\right)^{1/2}$ can be expressed as a function of M_o , p_1 , and $\frac{\Delta H}{q_o}$. The last part of equation (2)

$\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ can be expressed as a function of M_o , $\frac{\Delta H}{q_o}$, and K . The two quantities of which the product is the point drag coefficient can therefore be determined independently. Values of the two parts of equation (2) required to evaluate the point drag coefficient for flows wherein energy has been added are presented in tables II and III.

The value of the energy parameter K can be computed directly for flow conditions where the energy input and mass flow are measurable and are uniform across the survey plane. Such a condition might be attained for flow through an efficient radiator installation. For flow conditions as found behind a propeller, however, where the energy input and elemental mass flow are not uniform and are difficult to measure, an evaluation of the energy parameter can better be made by experimental methods.

The energy equation from the free stream to the wake station becomes

$$\frac{v_o^2}{2} + Jc_p g T_o + \frac{E}{m} = \frac{v_1^2}{2} + Jc_p g T_1$$

For stagnation conditions at the free-stream and wake stations, the energy parameter becomes

$$\begin{aligned}
 K &= \frac{E}{Jc_p g m T_o} \\
 &= \frac{T_1' - T_o'}{T_o} \\
 &= \frac{\Delta T'}{T_o}
 \end{aligned}$$

where the prime refers to the stagnation temperature. The energy parameter becomes, then, merely the ratio of the stagnation-temperature rise to the absolute stream static temperature.

Inasmuch as the stagnation-temperature difference $T_1' - T_0'$ is small and must be measured accurately, stagnation-temperature thermocouples or resistance thermometers may be connected and calibrated to read the stagnation-temperature difference directly. The free-stream stagnation-temperature reference may be obtained by installing one of the temperature-measuring elements outside the wake. The determination of the absolute free-stream static temperature does not require great accuracy; therefore, conventional methods may be used.

USE OF TABLES AND CHARTS

The values presented in tables I to III for evaluation of the point drag coefficient are difficult to apply directly because interpolation is required. The tabulated values have therefore been plotted in the form of direct-reading charts.

Isoenergetic Flows

Examples of the types of plot found useful for evaluation of the point drag coefficient for isoenergetic flow are presented in figure 2 for $M_0 = 0.20$ and 0.70 , respectively. A representative cross plot of the tabular data of table I is presented in figure 3. It should be pointed out that the scale of the plots of point drag coefficient presented in this report is too small for accurate work. These plots have been included, however, to indicate the general form of the curves and to provide a basis for more accurate large-scale plots based on the original tabular data.

The charts in their present form are especially applicable for use in high-speed wind tunnels, where tests are usually run at fixed values of stream Mach number, and the value of the static-pressure and total-pressure-loss coefficients can be determined directly from the pressure records and wind-tunnel calibration. For use at values of stream Mach numbers different from those tabulated, the chart for the nearest tabulated Mach number may be used with but small error ($\pm 1\frac{1}{2}$ percent). For greater accuracy at the intermediate Mach numbers a linear interpolation may be assumed (fig. 3).

The presentation of the tabulated results may be changed from that used in figure 2 to fit various conditions. For example, the ratio $\frac{c_d'}{\Delta H/q_0}$ may be plotted

instead of c_d' in order to attain greater accuracy on a small-scale plot. For many tests the wake static-pressure coefficient remains essentially constant with changes in M_0 ; therefore the point drag coefficient may be plotted against $\Delta H/q_0$ for a range of values of M_0 at given values of P_1 . The use of the tabulated data in this form may be applicable to flight tests.

Flows Wherein Energy Is Added

In figure 4 are presented representative plots of tables II and III for evaluating the point drag coefficient for flows wherein energy is added. This figure shows that an increase in stagnation temperature of the order of 1° F ($K \approx 0.002$) can produce a significant effect on the evaluation of the drag coefficient at low values of $\Delta H/q_0$. For many cases, however, the energy effect may be considered negligible - as, for example, the flow behind a lightly loaded propeller - and the tabulated results for isoenergetic flow (table I) may be used directly. A comparison of the numerical result for the experimental value of K with that for $K = 0$ indicates the magnitude of the energy effect and which form of the equations should be used. The isoenergetic values of c_d' presented in table I correspond to the values of c_d' for $K = 0$ presented in tables II and III. Because the solutions of the equations for isoenergetic flow can be determined from table I directly in one step, table I should be used whenever the energy effect can be neglected.

It should be pointed out that for flows wherein energy is added, certain combinations of the parameters M_0 , P_1 , $\frac{\Delta H}{q_0}$, and K specify supersonic flow in the wake. For such flows the measurement of the wake pressures is subject to corrections that are dependent on the intensity of the shock at the local supersonic speed. No attempt has been made in this report to evaluate these shock corrections to the measured pressures.

Integration Techniques

The evaluation of the total-drag coefficient involves the integration of the point-drag-coefficient profile. Inasmuch as the evaluation of c_d' is independent of the integration process, great flexibility in the application of the proposed wake-survey techniques to various types of flow can be attained. The flows behind airfoils, within internal-flow systems, or through propellers may therefore be calculated by similar methods that vary only in the integration technique employed. The wake profile and the manner in which the wake is surveyed will determine the optimum type of integration.

With the values of the point drag coefficient determined from the charts or tables presented in this report, the value of the total-drag coefficient becomes

$$C_D = \frac{1}{A_R} \int_{\text{wake}} c_d' dA_1$$

where A_R is the reference area upon which C_D is to be based. The integration technique employed should be determined from considerations of expediency and the accuracy of integration desired.

For two-dimensional flows behind airfoils the airfoil-section drag coefficient becomes

$$c_d = \frac{1}{c} \int_{\text{wake}} c_d' dy$$

where the integral represents the area under the c_d' -curve when expressed in the same units as the chord c .

NUMERICAL EXAMPLES

Isoenergetic Flow

Assume the following set of conditions, which might correspond to the center of the wake of an airfoil at high speed:

$$M_o = 0.70$$

$$P_1 = 0.12$$

$$\frac{\Delta H}{q_o} = 0.3$$

An interpolation of table I or the use of the large-scale plots of table I (fig. 2(b), for example) gives the value of the point drag coefficient c_d' of 0.1964. The resulting positive value indicates drag.

Flows Wherein Energy Is Added

(1) Assume the following set of conditions, which might correspond to the flow behind a highly loaded propeller for the climb condition:

$$M_o = 0.20$$

$$P_1 = 0.25$$

$$\frac{\Delta H}{q_o} = -0.50$$

(The negative value of $\Delta H/q_o$ indicates total-pressure increase.)

$$\Delta T' = 4.0^\circ$$

$$T_o = 500^\circ \text{ F abs.}$$

From the value of absolute static temperature and stagnation-temperature rise,

$$K = \frac{4.0}{500}$$

$$= 0.008$$

An interpolation of tables II and III or the use of the large-scale plots of tables II and III (fig. 4, for example)

gives the following values of the parts of equation (2) that constitute the point drag coefficient:

$$2\left(\frac{p_1}{p_2}\right)^{1/2}\left(\frac{q_1}{q_0}\right)^{1/2} = 2.2368$$

$$\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2} = -0.2217$$

The value of the point drag coefficient thus becomes

$$\begin{aligned} c_d' &= (2.2368)(-0.2217) \\ &= -0.4959 \end{aligned}$$

The resulting negative value indicates thrust.

(2) Assume the following set of conditions, which might correspond to the flow behind a radiator measured near the duct outlet:

$$\begin{aligned} H &= \frac{E}{J} \\ &= 600 \text{ Btu/sec} \end{aligned}$$

$$\dot{m} = 30 \text{ lb/sec}$$

$$T_o = 430^\circ \text{ F abs.}$$

$$M_o = 0.7$$

$$\frac{\Delta H}{q_o} = 0.4$$

$$P_1 = 0.1$$

Now

$$\begin{aligned} K &= \frac{E}{Jc_p g m T_o} \\ &= \frac{600}{0.24 \times 30 \times 430} \\ &= 0.194 \end{aligned}$$

From these values of the parameters,

$$2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_o} \right)^{1/2} = 1.5503$$

and

$$\left(\frac{p_2}{p_o} \right)^{1/2} - \left(\frac{q_2}{q_o} \right)^{1/2} = 0.0889$$

The value of the point drag coefficient thus becomes

$$\begin{aligned} c_d' &= 1.5503 \times 0.0889 \\ &= 0.1378 \end{aligned}$$

The resulting positive value indicates drag.

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APPENDIX

EQUATIONS FOR COMPUTING TABULATED VALUES
OF DRAG COEFFICIENT

The various terms of the drag-coefficient equation (equation (1)) can be expressed by the following relations. It should be pointed out that by definition $p_2 = p_o$ and by assumption $H_1 = H_2$. (A detailed derivation of the following terms can be found in appendix B of reference 3.)

$$\left(\frac{p_1}{p_2}\right)^{1/2} = \left(\frac{p_1}{p_o}\right)^{1/2\gamma}$$

$$\left(\frac{q_1}{q_o}\right)^{1/2} = \left(\frac{H_1 - p_1}{H_o - p_o}\right)^{1/2} \left(\frac{F_{c_o}}{F_{c_1}}\right)^{1/2}$$

$$\left(\frac{q_2}{q_o}\right)^{1/2} = \left(\frac{H_1 - p_o}{H_o - p_o}\right)^{1/2} \left(\frac{F_{c_o}}{F_{c_2}}\right)^{1/2}$$

$$\left(\frac{p_2}{p_o}\right)^{1/2} = \left(\frac{1 + \frac{\gamma - 1}{2} M_o^2 \frac{q_2}{q_o}}{1 + \frac{\gamma - 1}{2} M_o^2 + K}\right)^{1/2}$$

Where K is the energy-input factor. (For isoenergetic flow $K = 0$.)

For the use of the equations in the foregoing form, some initial value of one of the pressures must be assumed. Because the values of the various parts of equation (2) are determined fundamentally by the pressure ratio, the numerical value of a pressure has no significance; therefore any positive value may be used.

The detailed computing procedure is as follows:

(1) Given M_o and a range of values of P_1 and $\Delta H/q_o$. (The value of K must also be considered for flows wherein energy is added.)

(2) In order to determine the free-stream pressures corresponding to M_o , assume any convenient value of stream static pressure p_o (1000 lb/sq ft is assumed here) and use the following relations:

$$q_o = \frac{\gamma}{2} p_o M_o^2$$

$$H_o = p_o + F_{c_o} q_o$$

where $\gamma = 1.400$ and F_{c_o} is obtained from table IV for the value of M_o . The value of H_o can also be determined for given values of M_o and p_o from the following equation:

$$M^2 = \frac{2}{\gamma - 1} \left[\left(\frac{H}{p} \right)^{\frac{\gamma-1}{\gamma}} - 1 \right]$$

(3) The step-by-step computing procedure is as follows:

| Column | Relation |
|--------|---|
| (1) | $\Delta H = \frac{\Delta H}{q_o} q_o$ |
| (2) | $\Delta p = P_1 q_o$ |
| (3) | $p_1 = p_o + \Delta p = p_o + (2)$ |
| (4) | $H_1 = H_2 = H_o - \Delta H = H_o - (1)$ |
| (5) | $H_1 - p_1 = (4) - (3)$ |
| (6) | $\frac{H_1 - p_1}{p_1} = \frac{(5)}{(3)}$ |
| (7) | F_{c1} from a plot of table IV for value of (6) |
| (8) | $H_2 - p_2 = (4) - p_o$ |
| (9) | $\frac{H_2 - p_2}{p_2} = \frac{(8)}{p_o}$ |
| (10) | F_{c2} from a plot of table IV for a value of (9) |
| (11) | $\frac{q_2}{q_o} = \frac{1}{q_o} \frac{H_2 - p_2}{F_{c2}} = \frac{1}{q_o} \frac{(8)}{(10)}$ |
| (12) | $\left(\frac{q_2}{q_o}\right)^{1/2} = (11)^{1/2}$ |
| (13) | $\frac{q_1}{q_o} = \frac{1}{q_o} \frac{H_1 - p_1}{F_{c1}} = \frac{1}{q_o} \frac{(5)}{(7)}$ |
| (14) | $\left(\frac{q_1}{q_o}\right)^{1/2} = (13)^{1/2}$ |

| Column | Relation |
|--------|---|
| (15) | $\left(\frac{p_1}{p_o}\right)^{1/2\gamma} = \left(\frac{(3)}{p_o}\right)^{0.357}$ |
| (16) | $\frac{p_2}{p_o} = \frac{1 + \frac{\gamma - 1}{2} M_o^2 \frac{q_2}{q_o}}{1 + \frac{\gamma - 1}{2} M_o^2 + K}$ $= \frac{1 + 0.2 M_o^2 (11)}{1 + 0.2 M_o^2 + K}$ <p>For isoenergetic flow, $K = 0$</p> |
| (17) | $\left(\frac{p_2}{p_o}\right)^{1/2} = (16)^{1/2}$ |
| (18) | $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2} = (17) - (12)$ |
| (19) | $c_d' = 2 \left(\frac{p_1}{p_o}\right)^{1/2\gamma} \left(\frac{q_1}{q_o}\right)^{1/2} \left[\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2} \right]$ $= 2 \times (15) \times (14) \times (18)$ |

(4) The numerical solutions of the various steps of the computing equations are given for the following examples:

| | | | |
|----------------|----------|---------|----------|
| M_o | 0.70 | 0.2 | 0.70 |
| P_1 | 0.12 | 0.25 | 0.1 |
| $\Delta H/q_o$ | 0.3 | -0.5 | 0.4 |
| K | ----- | 0.008 | 0.194 |
| p_o | 1000 | 1000 | 1000 |
| q_o | 343 | 28 | 343 |
| H_o | 1387.034 | 1028.28 | 1387.084 |
| (1) | 102.9 | -14 | 137.2 |
| (2) | 41.16 | 7 | 34.3 |
| (3) | 1041.16 | 1007 | 1034.3 |
| (4) | 1284.184 | 1042.28 | 1249.884 |
| (5) | 243.024 | 35.28 | 215.584 |
| (6) | 0.2334 | 0.0350 | 0.2084 |
| (7) | 1.0796 | 1.0124 | 1.07138 |
| (8) | 234.184 | 42.28 | 249.884 |
| (9) | 0.2842 | 0.0423 | 0.2499 |
| (10) | 1.0960 | 1.0150 | 1.08494 |
| (11) | 0.7560 | 1.4377 | 0.6715 |
| (12) | 0.8695 | 1.2197 | 0.8194 |
| (13) | 0.6563 | 1.2446 | 0.5367 |
| (14) | 0.8101 | 1.1156 | 0.7659 |
| (15) | 1.0145 | 1.0025 | 1.0121 |
| (16) | 0.9782 | 0.9960 | 0.8249 |
| (17) | 0.9890 | 0.9980 | 0.9083 |
| (18) | 0.1195 | -0.2217 | 0.0839 |
| (19) | 0.1964 | -0.4959 | 0.1378 |

Any arbitrary value of p_o may be assumed without change in the final result. For these examples $p_o = 1000$ has been used.

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TABLE I
POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW

$$[M_0 = 0]$$

| P_1 $\frac{\Delta H}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|---------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.9250 | 0.8914 | 0.8561 | 0.8200 | 0.7818 | 0.7416 | 0.6992 | 0.6540 | 0.6056 | 0.5528 | 0.4944 | 0.4282 | 0.3496 | 0.2472 |
| .700 | .8090 | .7834 | .7568 | .7292 | .7008 | .6708 | .6396 | .6068 | .5722 | .5352 | .4954 | .4524 | .4046 | .3504 |
| .600 | .6972 | .6776 | .6574 | .6366 | .6150 | .5926 | .5694 | .5450 | .5198 | .4930 | .4648 | .4348 | .4026 | .3676 |
| .500 | .5858 | .5710 | .5558 | .5402 | .5240 | .5074 | .4902 | .4722 | .4538 | .4344 | .4142 | .3930 | .3706 | .3466 |
| .400 | .4728 | .4620 | .4508 | .4394 | .4276 | .4156 | .4032 | .3904 | .3772 | .3634 | .3492 | .3344 | .3188 | .3024 |
| .300 | .3578 | .3502 | .3426 | .3348 | .3266 | .3184 | .3098 | .3012 | .2922 | .2828 | .2732 | .2634 | .2530 | .2422 |
| .250 | .2996 | .2936 | .2874 | .2810 | .2746 | .2680 | .2612 | .2542 | .2470 | .2396 | .2320 | .2242 | .2160 | .2076 |
| .200 | .2408 | .2362 | .2314 | .2264 | .2216 | .2164 | .2112 | .2058 | .2004 | .1948 | .1888 | .1828 | .1768 | .1702 |
| .150 | .1812 | .1778 | .1744 | .1708 | .1672 | .1636 | .1598 | .1560 | .1520 | .1480 | .1438 | .1396 | .1350 | .1306 |
| .100 | .1214 | .1192 | .1170 | .1148 | .1124 | .1100 | .1076 | .1052 | .1026 | .1000 | .0974 | .0946 | .0918 | .0888 |
| .075 | .0912 | .0896 | .0880 | .0862 | .0846 | .0828 | .0810 | .0792 | .0774 | .0754 | .0734 | .0714 | .0694 | .0672 |
| .050 | .0610 | .0598 | .0588 | .0576 | .0566 | .0554 | .0542 | .0530 | .0518 | .0506 | .0494 | .0480 | .0466 | .0452 |
| .025 | .0306 | .0300 | .0296 | .0290 | .0284 | .0278 | .0274 | .0268 | .0262 | .0256 | .0248 | .0242 | .0236 | .0228 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0306 | -.0302 | -.0296 | -.0290 | -.0286 | -.0280 | -.0274 | -.0268 | -.0264 | -.0258 | -.0252 | -.0244 | -.0238 | -.0232 |
| -.050 | -.0616 | -.0606 | -.0594 | -.0584 | -.0574 | -.0564 | -.0552 | -.0542 | -.0530 | -.0518 | -.0506 | -.0494 | -.0482 | -.0468 |
| -.075 | -.0924 | -.0908 | -.0894 | -.0878 | -.0864 | -.0848 | -.0832 | -.0814 | -.0798 | -.0780 | -.0764 | -.0746 | -.0726 | -.0708 |
| -.100 | -.1234 | -.1216 | -.1196 | -.1176 | -.1154 | -.1134 | -.1112 | -.1092 | -.1070 | -.1046 | -.1024 | -.1000 | -.0976 | -.0952 |
| -.150 | -.1858 | -.1830 | -.1800 | -.1770 | -.1742 | -.1710 | -.1680 | -.1648 | -.1616 | -.1584 | -.1550 | -.1516 | -.1482 | -.1446 |
| -.200 | -.2488 | -.2450 | -.2412 | -.2376 | -.2336 | -.2298 | -.2258 | -.2216 | -.2176 | -.2134 | -.2090 | -.2046 | -.2002 | -.1956 |
| -.250 | -.3122 | -.3076 | -.3032 | -.2986 | -.2938 | -.2890 | -.2842 | -.2792 | -.2742 | -.2690 | -.2638 | -.2586 | -.2530 | -.2476 |
| -.300 | -.3762 | -.3710 | -.3656 | -.3602 | -.3546 | -.3490 | -.3434 | -.3376 | -.3318 | -.3258 | -.3198 | -.3134 | -.3072 | -.3008 |
| -.400 | -.5050 | -.4984 | -.4916 | -.4848 | -.4778 | -.4706 | -.4634 | -.4562 | -.4488 | -.4412 | -.4336 | -.4258 | -.4178 | -.4096 |
| -.500 | -.6356 | -.6276 | -.6194 | -.6112 | -.6030 | -.5946 | -.5860 | -.5772 | -.5684 | -.5596 | -.5504 | -.5412 | -.5318 | -.5222 |
| -.600 | -.7678 | -.7586 | -.7492 | -.7398 | -.7302 | -.7206 | -.7108 | -.7008 | -.6908 | -.6806 | -.6702 | -.6596 | -.6488 | -.6380 |
| -.700 | -.9012 | -.8910 | -.8804 | -.8700 | -.8592 | -.8484 | -.8376 | -.8264 | -.8152 | -.8038 | -.7922 | -.7804 | -.7686 | -.7564 |
| -.800 | -1.0362 | -1.0248 | -1.0134 | -1.0018 | -.9900 | -.9782 | -.9662 | -.9540 | -.9418 | -.9292 | -.9166 | -.9038 | -.8908 | -.8776 |

| P_1 $\frac{\Delta H}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2860 | 0.2022 | 0.1644 | 0.1310 | 0.1088 | 0.0866 | 0.0644 | 0.0422 | 0.0200 | 0.0000 | 0.0000 | 0.0000 | 0.0000 |
| .700 | .3286 | .2846 | .2324 | .1814 | .1354 | .0944 | .0584 | .0274 | .0014 | -.0206 | -.0426 | -.0646 | -.0866 |
| .600 | .3208 | .2930 | .2620 | .2268 | .1888 | .1478 | .1068 | .0658 | .0248 | -.0162 | -.0482 | -.0802 | -.1122 |
| .500 | .2852 | .2666 | .2470 | .2254 | .2016 | .1746 | .1466 | .1186 | .0806 | .0426 | -.0154 | -.0574 | -.0994 |
| .400 | .2310 | .2190 | .2066 | .1932 | .1788 | .1634 | .1460 | .1264 | .1032 | .0730 | .0428 | -.0112 | -.0532 |
| .300 | .1988 | .1896 | .1798 | .1696 | .1586 | .1468 | .1340 | .1198 | .1038 | .0848 | .0668 | .0472 | .0276 |
| .250 | .1636 | .1566 | .1494 | .1416 | .1336 | .1258 | .1156 | .1056 | .0944 | .0818 | .0688 | .0548 | .0408 |
| .200 | .1258 | .1208 | .1156 | .1104 | .1046 | .0986 | .0922 | .0854 | .0780 | .0698 | .0604 | .0494 | .0378 |
| .150 | .0858 | .0828 | .0794 | .0760 | .0726 | .0688 | .0648 | .0606 | .0562 | .0514 | .0460 | .0398 | .0324 |
| .100 | .0650 | .0628 | .0604 | .0580 | .0554 | .0526 | .0498 | .0468 | .0436 | .0400 | .0362 | .0320 | .0270 |
| .075 | .0438 | .0424 | .0408 | .0392 | .0376 | .0358 | .0340 | .0320 | .0300 | .0278 | .0254 | .0226 | .0196 |
| .050 | .0222 | .0214 | .0208 | .0200 | .0192 | .0182 | .0174 | .0164 | .0154 | .0144 | .0132 | .0118 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0226 | -.0218 | -.0212 | -.0204 | -.0196 | -.0188 | -.0180 | -.0170 | -.0162 | -.0152 | -.0142 | -.0130 | -.0118 |
| -.050 | -.0456 | -.0442 | -.0428 | -.0414 | -.0398 | -.0382 | -.0366 | -.0350 | -.0332 | -.0312 | -.0292 | -.0270 | -.0248 |
| -.075 | -.0668 | -.0668 | -.0648 | -.0626 | -.0604 | -.0582 | -.0558 | -.0534 | -.0508 | -.0480 | -.0450 | -.0420 | -.0386 |
| -.100 | -.0926 | -.0900 | -.0872 | -.0846 | -.0816 | -.0786 | -.0756 | -.0724 | -.0690 | -.0654 | -.0618 | -.0578 | -.0534 |
| -.150 | -.1410 | -.1372 | -.1334 | -.1294 | -.1252 | -.1210 | -.1166 | -.1120 | -.1072 | -.1022 | -.0970 | -.0914 | -.0856 |
| -.200 | -.1908 | -.1860 | -.1810 | -.1760 | -.1706 | -.1652 | -.1596 | -.1538 | -.1478 | -.1414 | -.1350 | -.1280 | -.1206 |
| -.250 | -.2418 | -.2360 | -.2300 | -.2238 | -.2176 | -.2110 | -.2044 | -.1974 | -.1902 | -.1828 | -.1750 | -.1668 | -.1584 |
| -.300 | -.2910 | -.2874 | -.2804 | -.2734 | -.2660 | -.2586 | -.2506 | -.2428 | -.2346 | -.2260 | -.2172 | -.2080 | -.1982 |
| -.400 | -.4014 | -.3930 | -.3842 | -.3750 | -.3664 | -.3572 | -.3476 | -.3378 | -.3278 | -.3174 | -.3066 | -.2954 | -.2838 |
| -.500 | -.5124 | -.5024 | -.4922 | -.4820 | -.4714 | -.4606 | -.4494 | -.4380 | -.4264 | -.4144 | -.4020 | -.3892 | -.3760 |
| -.600 | -.6268 | -.6156 | -.6040 | -.5924 | -.5802 | -.5682 | -.5556 | -.5430 | -.5298 | -.5164 | -.5026 | -.4884 | -.4738 |
| -.700 | -.7442 | -.7316 | -.7190 | -.7060 | -.6928 | -.6792 | -.6656 | -.6516 | -.6372 | -.6224 | -.6076 | -.5922 | -.5764 |
| -.800 | -.8640 | -.8506 | -.8366 | -.8228 | -.8084 | -.7938 | -.7790 | -.7638 | -.7484 | -.7326 | -.7166 | -.7000 | -.6832 |

TABLE I - Continued
POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.05]$$

| P_1 $\frac{\Delta F}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|----------|----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.9234 | 0.8900 | 0.8552 | 0.8186 | 0.7808 | 0.7408 | 0.6986 | 0.6534 | 0.6052 | 0.5526 | 0.4944 | 0.4284 | 0.3502 | 0.2482 |
| .700 | .8074 | .7818 | .7554 | .7280 | .6996 | .6698 | .6388 | .6060 | .5714 | .5346 | .4952 | .4520 | .4044 | .3504 |
| .600 | .6960 | .6764 | .6562 | .6354 | .6140 | .5918 | .5686 | .5444 | .5192 | .4926 | .4644 | .4346 | .4024 | .3674 |
| .500 | .5842 | .5694 | .5542 | .5388 | .5226 | .5060 | .4890 | .4712 | .4528 | .4336 | .4134 | .3922 | .3698 | .3460 |
| .400 | .4718 | .4610 | .4498 | .4386 | .4268 | .4148 | .4024 | .3898 | .3766 | .3630 | .3488 | .3340 | .3184 | .3020 |
| .300 | .3574 | .3498 | .3422 | .3344 | .3262 | .3180 | .3096 | .3010 | .2920 | .2826 | .2732 | .2632 | .2530 | .2422 |
| .250 | .2990 | .2930 | .2868 | .2806 | .2742 | .2676 | .2608 | .2538 | .2466 | .2392 | .2316 | .2238 | .2158 | .2074 |
| .200 | .2404 | .2358 | .2310 | .2262 | .2212 | .2162 | .2110 | .2056 | .2002 | .1946 | .1888 | .1828 | .1766 | .1702 |
| .150 | .1806 | .1774 | .1738 | .1704 | .1668 | .1632 | .1594 | .1556 | .1516 | .1476 | .1434 | .1392 | .1348 | .1302 |
| .100 | .1214 | .1192 | .1170 | .1146 | .1124 | .1100 | .1076 | .1052 | .1026 | .1000 | .0974 | .0946 | .0918 | .0888 |
| .075 | .0912 | .0896 | .0878 | .0862 | .0846 | .0828 | .0810 | .0792 | .0774 | .0754 | .0734 | .0714 | .0694 | .0672 |
| .050 | .0608 | .0598 | .0588 | .0578 | .0566 | .0554 | .0542 | .0530 | .0518 | .0506 | .0494 | .0482 | .0466 | .0452 |
| .025 | .0306 | .0300 | .0296 | .0296 | .0284 | .0278 | .0274 | .0268 | .0262 | .0256 | .0248 | .0242 | .0236 | .0228 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0306 | -.0302 | -.0296 | -.0290 | -.0286 | -.0280 | -.0274 | -.0268 | -.0262 | -.0258 | -.0252 | -.0244 | -.0238 | -.0232 |
| -.050 | -.0614 | -.0604 | -.0594 | -.0584 | -.0574 | -.0562 | -.0552 | -.0540 | -.0530 | -.0518 | -.0506 | -.0494 | -.0482 | -.0468 |
| -.075 | -.0924 | -.0908 | -.0894 | -.0878 | -.0862 | -.0846 | -.0830 | -.0814 | -.0798 | -.0780 | -.0762 | -.0744 | -.0726 | -.0708 |
| -.100 | -.1234 | -.1214 | -.1194 | -.1174 | -.1154 | -.1134 | -.1112 | -.1090 | -.1070 | -.1046 | -.1024 | -.1000 | -.0976 | -.0952 |
| -.150 | -.1860 | -.1830 | -.1802 | -.1772 | -.1742 | -.1712 | -.1682 | -.1650 | -.1618 | -.1586 | -.1552 | -.1518 | -.1484 | -.1448 |
| -.200 | -.2484 | -.2446 | -.2410 | -.2372 | -.2334 | -.2294 | -.2254 | -.2214 | -.2172 | -.2130 | -.2088 | -.2044 | -.2000 | -.1954 |
| -.250 | -.3120 | -.3074 | -.3030 | -.2984 | -.2936 | -.2888 | -.2840 | -.2790 | -.2740 | -.2690 | -.2638 | -.2584 | -.2530 | -.2474 |
| -.300 | -.3748 | -.3696 | -.3644 | -.3590 | -.3534 | -.3480 | -.3424 | -.3366 | -.3308 | -.3248 | -.3188 | -.3126 | -.3062 | -.2998 |
| -.400 | -.5036 | -.4970 | -.4902 | -.4834 | -.4764 | -.4694 | -.4622 | -.4550 | -.4476 | -.4400 | -.4324 | -.4248 | -.4168 | -.4088 |
| -.500 | -.6340 | -.6260 | -.6180 | -.6098 | -.6016 | -.5932 | -.5846 | -.5760 | -.5672 | -.5584 | -.5492 | -.5400 | -.5306 | -.5212 |
| -.600 | -.7656 | -.7566 | -.7474 | -.7380 | -.7284 | -.7188 | -.7090 | -.6992 | -.6892 | -.6790 | -.6686 | -.6582 | -.6476 | -.6366 |
| -.700 | -.8990 | -.8888 | -.8784 | -.8680 | -.8574 | -.8466 | -.8356 | -.8246 | -.8134 | -.8022 | -.7906 | -.7790 | -.7670 | -.7550 |
| -.800 | -.1.0330 | -.1.0218 | -.1.0104 | -.9990 | -.9874 | -.9756 | -.9636 | -.9516 | -.9394 | -.9270 | -.9144 | -.9016 | -.8888 | -.8756 |

| P_1 $\frac{\Delta F}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2864 | 0.2848 | 0.2328 | 0.1650 | 0.1854 | 0.1746 | 0.1428 | 0.1012 | 0.0734 | 0.0460 | 0.0202 | 0.0000 | 0.0000 |
| .700 | .3288 | .2926 | .2618 | .2268 | .2016 | .1634 | .1162 | .0768 | .0460 | .0202 | 0.0000 | 0.0000 | 0.0000 |
| .600 | .3204 | .2664 | .2468 | .2254 | .2016 | .1634 | .1162 | .0768 | .0460 | .0202 | 0.0000 | 0.0000 | 0.0000 |
| .500 | .2848 | .2664 | .2468 | .2254 | .2016 | .1634 | .1162 | .0768 | .0460 | .0202 | 0.0000 | 0.0000 | 0.0000 |
| .400 | .2310 | .2192 | .2066 | .1934 | .1790 | .1634 | .1462 | .1268 | .1036 | .0734 | 0.0460 | 0.0202 | 0.0000 |
| .300 | .1984 | .1892 | .1796 | .1694 | .1584 | .1466 | .1340 | .1198 | .1038 | .0848 | 0.0602 | 0.0350 | 0.0100 |
| .250 | .1636 | .1566 | .1494 | .1416 | .1336 | .1250 | .1158 | .1056 | .0946 | .0820 | .0670 | .0494 | 0.0350 |
| .200 | .1254 | .1206 | .1154 | .1100 | .1044 | .0984 | .0920 | .0852 | .0778 | .0696 | .0604 | .0494 | 0.0350 |
| .150 | .0858 | .0828 | .0796 | .0762 | .0726 | .0688 | .0650 | .0608 | .0562 | .0514 | .0460 | .0398 | 0.0326 |
| .100 | .0650 | .0628 | .0604 | .0580 | .0554 | .0526 | .0498 | .0468 | .0436 | .0400 | .0362 | .0320 | 0.0270 |
| .075 | .0438 | .0424 | .0408 | .0392 | .0376 | .0358 | .0340 | .0320 | .0300 | .0278 | .0254 | .0226 | 0.0196 |
| .050 | .0222 | .0214 | .0208 | .0200 | .0192 | .0182 | .0174 | .0164 | .0154 | .0144 | .0132 | .0120 | 0.0106 |
| .025 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0222 | -.0218 | -.0212 | -.0204 | -.0196 | -.0188 | -.0180 | -.0170 | -.0162 | -.0152 | -.0142 | -.0130 | -.0118 |
| -.050 | -.0436 | -.0412 | -.0428 | -.0414 | -.0398 | -.0382 | -.0366 | -.0350 | -.0332 | -.0312 | -.0292 | -.0270 | -.0248 |
| -.075 | -.0688 | -.0668 | -.0648 | -.0626 | -.0604 | -.0582 | -.0558 | -.0534 | -.0508 | -.0480 | -.0450 | -.0420 | -.0386 |
| -.100 | -.0926 | -.0900 | -.0874 | -.0846 | -.0816 | -.0788 | -.0756 | -.0724 | -.0690 | -.0656 | -.0618 | -.0578 | -.0536 |
| -.150 | -.1410 | -.1374 | -.1334 | -.1294 | -.1254 | -.1212 | -.1168 | -.1122 | -.1074 | -.1024 | -.0972 | -.0916 | -.0856 |
| -.200 | -.1906 | -.1858 | -.1808 | -.1758 | -.1706 | -.1652 | -.1596 | -.1538 | -.1478 | -.1414 | -.1350 | -.1280 | -.1206 |
| -.250 | -.2418 | -.2360 | -.2300 | -.2238 | -.2176 | -.2110 | -.2044 | -.1974 | -.1902 | -.1828 | -.1752 | -.1670 | -.1584 |
| -.300 | -.2932 | -.2866 | -.2796 | -.2726 | -.2654 | -.2578 | -.2502 | -.2422 | -.2340 | -.2256 | -.2168 | -.2076 | -.1980 |
| -.400 | -.4006 | -.3920 | -.3836 | -.3748 | -.3656 | -.3564 | -.3470 | -.3372 | -.3272 | -.3168 | -.3060 | -.2950 | -.2834 |
| -.500 | -.5114 | -.5016 | -.4914 | -.4812 | -.4706 | -.4598 | -.4488 | -.4374 | -.4258 | -.4138 | -.4014 | -.3888 | -.3756 |
| -.600 | -.6256 | -.6144 | -.6030 | -.5912 | -.5794 | -.5672 | -.5548 | -.5420 | -.5290 | -.5156 | -.5018 | -.4878 | -.4732 |
| -.700 | -.7428 | -.7304 | -.7176 | -.7048 | -.6916 | -.6784 | -.6646 | -.6506 | -.6364 | -.6218 | -.6068 | -.5916 | -.5758 |
| -.800 | -.8622 | -.8488 | -.8350 | -.8210 | -.8068 | -.7922 | -.7776 | -.7624 | -.7472 | -.7314 | -.7154 | -.6990 | -.6822 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

 $[M_0 = 0.10]$

| P_1 $\frac{A}{A_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------|---------|---------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.9188 | 0.8858 | 0.8514 | 0.8154 | 0.7776 | 0.7382 | 0.6962 | 0.6518 | 0.6038 | 0.5518 | 0.4942 | 0.4290 | 0.3518 | 0.2518 |
| .700 | .8036 | .7782 | .7520 | .7250 | .6968 | .6674 | .6366 | .6042 | .5700 | .5334 | .4912 | .4518 | .4046 | .3512 |
| .600 | .6924 | .6730 | .6532 | .6326 | .6114 | .5894 | .5664 | .5424 | .5174 | .4912 | .4632 | .4336 | .4018 | .3672 |
| .500 | .5814 | .5688 | .5518 | .5364 | .5206 | .5042 | .4872 | .4698 | .4514 | .4324 | .4124 | .3914 | .3692 | .3456 |
| .400 | .4692 | .4586 | .4476 | .4364 | .4248 | .4130 | .4008 | .3882 | .3750 | .3616 | .3476 | .3328 | .3174 | .3014 |
| .300 | .3550 | .3476 | .3400 | .3322 | .3244 | .3162 | .3078 | .2992 | .2904 | .2812 | .2718 | .2620 | .2518 | .2412 |
| .250 | .2968 | .2910 | .2848 | .2786 | .2724 | .2658 | .2592 | .2524 | .2452 | .2380 | .2306 | .2228 | .2148 | .2064 |
| .200 | .2388 | .2342 | .2292 | .2248 | .2198 | .2148 | .2096 | .2044 | .1990 | .1934 | .1878 | .1818 | .1758 | .1694 |
| .150 | .1798 | .1764 | .1730 | .1696 | .1660 | .1624 | .1588 | .1550 | .1510 | .1470 | .1430 | .1388 | .1344 | .1298 |
| .100 | .1204 | .1182 | .1162 | .1138 | .1116 | .1092 | .1070 | .1044 | .1020 | .0994 | .0968 | .0940 | .0914 | .0884 |
| .075 | .0906 | .0890 | .0874 | .0856 | .0840 | .0822 | .0806 | .0788 | .0770 | .0750 | .0732 | .0712 | .0690 | .0670 |
| .050 | .0606 | .0596 | .0584 | .0574 | .0562 | .0552 | .0540 | .0528 | .0516 | .0504 | .0492 | .0478 | .0464 | .0452 |
| .025 | .0302 | .0298 | .0292 | .0288 | .0282 | .0276 | .0270 | .0266 | .0260 | .0254 | .0246 | .0240 | .0234 | .0228 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0304 | -.0298 | -.0294 | -.0288 | -.0282 | -.0278 | -.0272 | -.0266 | -.0260 | -.0254 | -.0250 | -.0242 | -.0236 | -.0230 |
| -.050 | -.0612 | -.0602 | -.0592 | -.0582 | -.0570 | -.0550 | -.0538 | -.0528 | -.0516 | -.0504 | -.0492 | -.0480 | -.0468 | -.0458 |
| -.075 | -.0916 | -.0902 | -.0888 | -.0872 | -.0856 | -.0842 | -.0826 | -.0810 | -.0792 | -.0776 | -.0758 | -.0742 | -.0722 | -.0704 |
| -.100 | -.1224 | -.1204 | -.1186 | -.1166 | -.1146 | -.1126 | -.1104 | -.1084 | -.1062 | -.1040 | -.1018 | -.0994 | -.0970 | -.0946 |
| -.150 | -.1842 | -.1814 | -.1786 | -.1758 | -.1728 | -.1700 | -.1668 | -.1638 | -.1606 | -.1574 | -.1542 | -.1508 | -.1474 | -.1438 |
| -.200 | -.2462 | -.2428 | -.2390 | -.2354 | -.2316 | -.2278 | -.2238 | -.2198 | -.2158 | -.2116 | -.2074 | -.2030 | -.1986 | -.1942 |
| -.250 | -.3092 | -.3048 | -.3004 | -.2960 | -.2912 | -.2866 | -.2818 | -.2770 | -.2720 | -.2670 | -.2620 | -.2566 | -.2514 | -.2458 |
| -.300 | -.3722 | -.3670 | -.3618 | -.3566 | -.3512 | -.3458 | -.3402 | -.3346 | -.3288 | -.3230 | -.3170 | -.3108 | -.3046 | -.2984 |
| -.400 | -.4996 | -.4932 | -.4866 | -.4798 | -.4730 | -.4662 | -.4592 | -.4520 | -.4448 | -.4374 | -.4298 | -.4222 | -.4144 | -.4064 |
| -.500 | -.6288 | -.6210 | -.6130 | -.6050 | -.5970 | -.5888 | -.5804 | -.5720 | -.5634 | -.5546 | -.5456 | -.5366 | -.5274 | -.5180 |
| -.600 | -.7592 | -.7502 | -.7412 | -.7320 | -.7228 | -.7132 | -.7038 | -.6940 | -.6842 | -.6742 | -.6640 | -.6538 | -.6432 | -.6326 |
| -.700 | -.8910 | -.8810 | -.8708 | -.8606 | -.8502 | -.8398 | -.8290 | -.8182 | -.8074 | -.7962 | -.7850 | -.7734 | -.7618 | -.7500 |
| -.800 | -1.0240 | -1.0130 | -1.0018 | -.9906 | -.9792 | -.9676 | -.9560 | -.9442 | -.9322 | -.9200 | -.9078 | -.8952 | -.8826 | -.8696 |

| P_1 $\frac{A}{A_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.0550 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .2880 | 0.2060 | 0.0450 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3288 | .2854 | .2342 | 0.1676 | 0.0366 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .3202 | .2926 | .2622 | .2274 | .1866 | 0.1336 | 0.0292 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | .2812 | .2660 | .2464 | .2252 | .2018 | .1750 | .1436 | 0.1028 | 0.0224 | ----- | ----- | ----- | ----- |
| .300 | .2300 | .2184 | .2060 | .1928 | .1786 | .1632 | .1462 | .1270 | .1040 | 0.0744 | 0.0162 | ----- | ----- |
| .250 | .1976 | .1886 | .1790 | .1688 | .1580 | .1464 | .1338 | .1198 | .1040 | .0854 | .0610 | ----- | ----- |
| .200 | .1628 | .1560 | .1488 | .1412 | .1332 | .1246 | .1154 | .1056 | .0946 | .0820 | .0672 | .0482 | .0106 |
| .150 | .1252 | .1202 | .1152 | .1098 | .1044 | .0984 | .0922 | .0854 | .0780 | .0698 | .0606 | .0498 | .0356 |
| .100 | .0854 | .0824 | .0792 | .0758 | .0724 | .0686 | .0648 | .0606 | .0562 | .0514 | .0460 | .0398 | .0328 |
| .075 | .0648 | .0626 | .0602 | .0578 | .0552 | .0526 | .0498 | .0468 | .0436 | .0400 | .0364 | .0320 | .0272 |
| .050 | .0438 | .0422 | .0408 | .0392 | .0374 | .0358 | .0340 | .0320 | .0300 | .0278 | .0254 | .0228 | .0198 |
| .025 | .0220 | .0214 | .0206 | .0198 | .0190 | .0182 | .0172 | .0164 | .0154 | .0144 | .0132 | .0120 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0224 | -.0216 | -.0210 | -.0202 | -.0194 | -.0188 | -.0178 | -.0170 | -.0162 | -.0152 | -.0140 | -.0130 | -.0118 |
| -.050 | -.0454 | -.0440 | -.0426 | -.0412 | -.0398 | -.0382 | -.0366 | -.0350 | -.0332 | -.0312 | -.0292 | -.0270 | -.0248 |
| -.075 | -.0686 | -.0666 | -.0646 | -.0624 | -.0602 | -.0580 | -.0556 | -.0532 | -.0506 | -.0480 | -.0450 | -.0420 | -.0386 |
| -.100 | -.0920 | -.0896 | -.0868 | -.0842 | -.0814 | -.0784 | -.0754 | -.0722 | -.0688 | -.0654 | -.0616 | -.0576 | -.0534 |
| -.150 | -.1402 | -.1366 | -.1328 | -.1288 | -.1248 | -.1206 | -.1162 | -.1116 | -.1070 | -.1020 | -.0968 | -.0914 | -.0856 |
| -.200 | -.1894 | -.1848 | -.1798 | -.1748 | -.1696 | -.1644 | -.1588 | -.1530 | -.1472 | -.1410 | -.1344 | -.1276 | -.1204 |
| -.250 | -.2402 | -.2346 | -.2286 | -.2226 | -.2164 | -.2100 | -.2034 | -.1966 | -.1894 | -.1820 | -.1744 | -.1664 | -.1578 |
| -.300 | -.2918 | -.2852 | -.2784 | -.2714 | -.2642 | -.2568 | -.2492 | -.2414 | -.2334 | -.2250 | -.2162 | -.2070 | -.1974 |
| -.400 | -.3984 | -.3900 | -.3816 | -.3728 | -.3640 | -.3548 | -.3454 | -.3358 | -.3258 | -.3156 | -.3050 | -.2940 | -.2826 |
| -.500 | -.5084 | -.4986 | -.4886 | -.4786 | -.4682 | -.4574 | -.4466 | -.4354 | -.4238 | -.4120 | -.3998 | -.3872 | -.3742 |
| -.600 | -.6216 | -.6106 | -.5994 | -.5878 | -.5760 | -.5640 | -.5518 | -.5392 | -.5264 | -.5132 | -.4996 | -.4856 | -.4714 |
| -.700 | -.7378 | -.7256 | -.7132 | -.7004 | -.6876 | -.6744 | -.6608 | -.6472 | -.6330 | -.6186 | -.6038 | -.5888 | -.5732 |
| -.800 | -.8566 | -.8432 | -.8296 | -.8158 | -.8018 | -.7876 | -.7730 | -.7582 | -.7430 | -.7276 | -.7118 | -.6956 | -.6790 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.15]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.9112 | 0.8788 | 0.8450 | 0.8096 | 0.7726 | 0.7338 | 0.6926 | 0.6488 | 0.6018 | 0.5506 | 0.4940 | 0.4300 | 0.3544 | 0.2572 |
| .700 | .7966 | .7718 | .7462 | .7194 | .6918 | .6628 | .6328 | .6010 | .5672 | .5312 | .4928 | .4508 | .4044 | .3520 |
| .600 | .6860 | .6672 | .6476 | .6274 | .6066 | .5850 | .5624 | .5390 | .5144 | .4884 | .4612 | .4318 | .4006 | .3666 |
| .500 | .5760 | .5614 | .5470 | .5324 | .5164 | .5004 | .4836 | .4664 | .4484 | .4298 | .4102 | .3896 | .3676 | .3444 |
| .400 | .4646 | .4542 | .4434 | .4324 | .4212 | .4096 | .3976 | .3852 | .3724 | .3590 | .3452 | .3308 | .3158 | .2998 |
| .300 | .3514 | .3442 | .3368 | .3292 | .3214 | .3134 | .3054 | .2970 | .2882 | .2792 | .2700 | .2604 | .2504 | .2398 |
| .250 | .2938 | .2880 | .2820 | .2760 | .2698 | .2634 | .2568 | .2502 | .2432 | .2362 | .2288 | .2212 | .2134 | .2052 |
| .200 | .2362 | .2316 | .2272 | .2224 | .2176 | .2128 | .2078 | .2026 | .1974 | .1918 | .1862 | .1804 | .1744 | .1682 |
| .150 | .1776 | .1744 | .1712 | .1678 | .1644 | .1608 | .1572 | .1534 | .1496 | .1458 | .1418 | .1376 | .1334 | .1288 |
| .100 | .1192 | .1170 | .1150 | .1128 | .1106 | .1082 | .1060 | .1036 | .1012 | .0986 | .0960 | .0934 | .0906 | .0878 |
| .075 | .0894 | .0878 | .0862 | .0846 | .0830 | .0814 | .0796 | .0778 | .0760 | .0742 | .0724 | .0704 | .0684 | .0664 |
| .050 | .0596 | .0586 | .0576 | .0566 | .0556 | .0544 | .0534 | .0522 | .0510 | .0498 | .0486 | .0472 | .0460 | .0446 |
| .025 | .0300 | .0294 | .0290 | .0284 | .0280 | .0274 | .0268 | .0262 | .0256 | .0250 | .0244 | .0238 | .0232 | .0226 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0300 | -.0294 | -.0290 | -.0286 | -.0280 | -.0274 | -.0270 | -.0264 | -.0258 | -.0252 | -.0248 | -.0242 | -.0234 | -.0228 |
| -.050 | -.0602 | -.0592 | -.0582 | -.0572 | -.0562 | -.0552 | -.0542 | -.0532 | -.0520 | -.0510 | -.0498 | -.0486 | -.0474 | -.0462 |
| -.075 | -.0906 | -.0892 | -.0878 | -.0864 | -.0848 | -.0834 | -.0818 | -.0802 | -.0786 | -.0770 | -.0752 | -.0736 | -.0718 | -.0700 |
| -.100 | -.1220 | -.1200 | -.1182 | -.1164 | -.1144 | -.1124 | -.1102 | -.1082 | -.1060 | -.1040 | -.1016 | -.0994 | -.0970 | -.0946 |
| -.150 | -.1818 | -.1792 | -.1764 | -.1736 | -.1708 | -.1680 | -.1650 | -.1620 | -.1590 | -.1558 | -.1526 | -.1494 | -.1460 | -.1426 |
| -.200 | -.2434 | -.2400 | -.2364 | -.2328 | -.2290 | -.2254 | -.2216 | -.2176 | -.2136 | -.2096 | -.2056 | -.2012 | -.1970 | -.1926 |
| -.250 | -.3054 | -.3010 | -.2968 | -.2924 | -.2878 | -.2834 | -.2788 | -.2740 | -.2692 | -.2644 | -.2592 | -.2542 | -.2490 | -.2436 |
| -.300 | -.3678 | -.3628 | -.3576 | -.3526 | -.3474 | -.3420 | -.3366 | -.3312 | -.3256 | -.3198 | -.3140 | -.3080 | -.3020 | -.2958 |
| -.400 | -.4930 | -.4866 | -.4802 | -.4738 | -.4672 | -.4604 | -.4536 | -.4466 | -.4396 | -.4324 | -.4252 | -.4176 | -.4100 | -.4024 |
| -.500 | -.6198 | -.6124 | -.6048 | -.5970 | -.5892 | -.5812 | -.5732 | -.5650 | -.5564 | -.5480 | -.5394 | -.5306 | -.5216 | -.5124 |
| -.600 | -.7486 | -.7400 | -.7312 | -.7224 | -.7134 | -.7042 | -.6950 | -.6856 | -.6760 | -.6664 | -.6564 | -.6464 | -.6362 | -.6258 |
| -.700 | -.8782 | -.8686 | -.8588 | -.8488 | -.8388 | -.8286 | -.8184 | -.8078 | -.7972 | -.7864 | -.7754 | -.7644 | -.7530 | -.7416 |
| -.800 | -1.0088 | -.9984 | -.9876 | -.9768 | -.9658 | -.9546 | -.9434 | -.9320 | -.9204 | -.9084 | -.8966 | -.8844 | -.8722 | -.8596 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.0816 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .2902 | 0.2106 | 0.0668 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3288 | .2862 | .2360 | 0.1712 | 0.0544 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .3194 | .2924 | .2622 | .2282 | .1882 | 0.1366 | 0.0434 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | .2830 | .2650 | .2460 | .2250 | .2018 | .1756 | .1448 | 0.1052 | 0.0334 | ----- | ----- | ----- | ----- |
| .300 | .2290 | .2174 | .2052 | .1922 | .1782 | .1632 | .1464 | .1274 | .1050 | 0.0762 | 0.0242 | ----- | ----- |
| .250 | .1966 | .1876 | .1782 | .1682 | .1576 | .1460 | .1336 | .1200 | .1044 | .0860 | .0624 | 0.0198 | ----- |
| .200 | .1618 | .1550 | .1480 | .1406 | .1326 | .1242 | .1152 | .1054 | .0946 | .0824 | .0678 | .0492 | 0.0156 |
| .150 | .1242 | .1196 | .1146 | .1092 | .1038 | .0980 | .0918 | .0852 | .0778 | .0698 | .0608 | .0502 | .0364 |
| .100 | .0850 | .0820 | .0788 | .0754 | .0718 | .0684 | .0646 | .0604 | .0560 | .0514 | .0460 | .0400 | .0330 |
| .075 | .0642 | .0620 | .0598 | .0574 | .0548 | .0522 | .0494 | .0464 | .0434 | .0400 | .0362 | .0320 | .0272 |
| .050 | .0432 | .0418 | .0404 | .0388 | .0372 | .0354 | .0338 | .0318 | .0298 | .0276 | .0252 | .0226 | .0198 |
| .025 | .0218 | .0212 | .0204 | .0196 | .0190 | .0180 | .0172 | .0164 | .0154 | .0142 | .0132 | .0120 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0222 | -.0216 | -.0208 | -.0202 | -.0194 | -.0186 | -.0178 | -.0170 | -.0160 | -.0150 | -.0140 | -.0130 | -.0118 |
| -.050 | -.0448 | -.0436 | -.0422 | -.0408 | -.0394 | -.0378 | -.0362 | -.0346 | -.0328 | -.0310 | -.0290 | -.0270 | -.0246 |
| -.075 | -.0680 | -.0662 | -.0642 | -.0620 | -.0600 | -.0576 | -.0554 | -.0530 | -.0504 | -.0478 | -.0450 | -.0418 | -.0386 |
| -.100 | -.0922 | -.0896 | -.0870 | -.0844 | -.0814 | -.0786 | -.0756 | -.0724 | -.0692 | -.0656 | -.0620 | -.0580 | -.0538 |
| -.150 | -.1390 | -.1354 | -.1316 | -.1278 | -.1238 | -.1196 | -.1154 | -.1110 | -.1064 | -.1014 | -.0964 | -.0910 | -.0852 |
| -.200 | -.1880 | -.1834 | -.1786 | -.1736 | -.1686 | -.1634 | -.1578 | -.1522 | -.1464 | -.1402 | -.1338 | -.1272 | -.1200 |
| -.250 | -.2382 | -.2326 | -.2268 | -.2208 | -.2148 | -.2084 | -.2020 | -.1952 | -.1884 | -.1810 | -.1734 | -.1656 | -.1572 |
| -.300 | -.2894 | -.2830 | -.2762 | -.2694 | -.2624 | -.2552 | -.2476 | -.2400 | -.2320 | -.2238 | -.2152 | -.2062 | -.1968 |
| -.400 | -.3944 | -.3862 | -.3780 | -.3696 | -.3608 | -.3518 | -.3426 | -.3332 | -.3234 | -.3134 | -.3030 | -.2922 | -.2810 |
| -.500 | -.5030 | -.4936 | -.4838 | -.4738 | -.4638 | -.4534 | -.4426 | -.4316 | -.4204 | -.4088 | -.3968 | -.3844 | -.3716 |
| -.600 | -.6152 | -.6044 | -.5934 | -.5822 | -.5708 | -.5590 | -.5470 | -.5348 | -.5222 | -.5092 | -.4958 | -.4822 | -.4682 |
| -.700 | -.7298 | -.7178 | -.7058 | -.6934 | -.6808 | -.6678 | -.6546 | -.6412 | -.6274 | -.6134 | -.5990 | -.5840 | -.5688 |
| -.800 | -.8468 | -.8340 | -.8208 | -.8074 | -.7938 | -.7798 | -.7656 | -.7512 | -.7364 | -.7212 | -.7056 | -.6898 | -.6736 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.20]$$

| P_1 $\frac{\Delta H}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.9006 | 0.8690 | 0.8360 | 0.8018 | 0.7660 | 0.7276 | 0.6876 | 0.6446 | 0.5988 | 0.5488 | 0.4936 | 0.4310 | 0.3578 | 0.2644 |
| .700 | .7870 | .7628 | .7380 | .7120 | .6850 | .6568 | .6276 | .5962 | .5634 | .5282 | .4906 | .4496 | .4044 | .3532 |
| .600 | .6774 | .6592 | .6402 | .6206 | .6002 | .5792 | .5572 | .5342 | .5102 | .4850 | .4582 | .4296 | .3990 | .3658 |
| .500 | .5684 | .5544 | .5402 | .5256 | .5104 | .4948 | .4786 | .4618 | .4444 | .4260 | .4070 | .3868 | .3654 | .3426 |
| .400 | .4580 | .4480 | .4376 | .4270 | .4160 | .4048 | .3930 | .3810 | .3686 | .3556 | .3422 | .3280 | .3134 | .2978 |
| .300 | .3464 | .3394 | .3322 | .3250 | .3174 | .3096 | .3018 | .2936 | .2852 | .2764 | .2674 | .2580 | .2482 | .2380 |
| .250 | .2896 | .2840 | .2784 | .2726 | .2666 | .2604 | .2540 | .2474 | .2408 | .2338 | .2266 | .2192 | .2116 | .2036 |
| .200 | .2326 | .2282 | .2240 | .2194 | .2148 | .2100 | .2052 | .2002 | .1950 | .1898 | .1842 | .1786 | .1728 | .1668 |
| .150 | .1752 | .1720 | .1688 | .1656 | .1622 | .1588 | .1554 | .1518 | .1482 | .1442 | .1404 | .1364 | .1322 | .1278 |
| .100 | .1170 | .1150 | .1130 | .1110 | .1088 | .1066 | .1044 | .1020 | .0998 | .0972 | .0948 | .0922 | .0896 | .0868 |
| .075 | .0880 | .0866 | .0850 | .0836 | .0820 | .0804 | .0786 | .0770 | .0752 | .0734 | .0716 | .0698 | .0678 | .0658 |
| .050 | .0588 | .0578 | .0568 | .0558 | .0548 | .0536 | .0526 | .0514 | .0504 | .0492 | .0480 | .0468 | .0454 | .0442 |
| .025 | .0294 | .0288 | .0284 | .0280 | .0274 | .0270 | .0264 | .0258 | .0252 | .0246 | .0240 | .0234 | .0228 | .0222 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0296 | -.0292 | -.0286 | -.0282 | -.0276 | -.0272 | -.0266 | -.0262 | -.0256 | -.0250 | -.0244 | -.0240 | -.0234 | -.0226 |
| -.050 | -.0592 | -.0582 | -.0574 | -.0564 | -.0554 | -.0544 | -.0534 | -.0524 | -.0514 | -.0502 | -.0492 | -.0480 | -.0468 | -.0456 |
| -.075 | -.0890 | -.0876 | -.0862 | -.0848 | -.0834 | -.0820 | -.0804 | -.0790 | -.0774 | -.0758 | -.0742 | -.0726 | -.0708 | -.0690 |
| -.100 | -.1190 | -.1172 | -.1154 | -.1136 | -.1116 | -.1098 | -.1078 | -.1058 | -.1038 | -.1016 | -.0996 | -.0974 | -.0950 | -.0928 |
| -.150 | -.1788 | -.1762 | -.1736 | -.1708 | -.1682 | -.1654 | -.1626 | -.1596 | -.1566 | -.1536 | -.1506 | -.1474 | -.1442 | -.1408 |
| -.200 | -.2392 | -.2358 | -.2324 | -.2290 | -.2254 | -.2218 | -.2182 | -.2144 | -.2106 | -.2068 | -.2028 | -.1986 | -.1944 | -.1902 |
| -.250 | -.3000 | -.2958 | -.2918 | -.2876 | -.2832 | -.2788 | -.2744 | -.2698 | -.2652 | -.2604 | -.2556 | -.2508 | -.2458 | -.2406 |
| -.300 | -.3612 | -.3564 | -.3516 | -.3466 | -.3416 | -.3366 | -.3314 | -.3260 | -.3206 | -.3152 | -.3096 | -.3038 | -.2980 | -.2920 |
| -.400 | -.4842 | -.4782 | -.4720 | -.4658 | -.4594 | -.4530 | -.4464 | -.4398 | -.4330 | -.4262 | -.4190 | -.4120 | -.4046 | -.3970 |
| -.500 | -.6084 | -.6012 | -.5940 | -.5866 | -.5790 | -.5714 | -.5638 | -.5558 | -.5478 | -.5396 | -.5314 | -.5228 | -.5142 | -.5054 |
| -.600 | -.7334 | -.7252 | -.7170 | -.7086 | -.7000 | -.6912 | -.6824 | -.6734 | -.6642 | -.6550 | -.6456 | -.6360 | -.6262 | -.6162 |
| -.700 | -.8606 | -.8514 | -.8422 | -.8326 | -.8232 | -.8136 | -.8036 | -.7938 | -.7836 | -.7732 | -.7628 | -.7520 | -.7412 | -.7302 |
| -.800 | -.9876 | -.9778 | -.9676 | -.9572 | -.9468 | -.9362 | -.9254 | -.9146 | -.9036 | -.8922 | -.8810 | -.8692 | -.8576 | -.8456 |

| P_1 $\frac{\Delta H}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.1080 | 0.2166 | 0.0886 | 0.1762 | 0.0720 | 0.1140 | 0.0574 | 0.1082 | 0.0442 | 0.0784 | 0.0320 | 0.0614 | 0.0166 |
| .700 | .2932 | .2874 | .2384 | .2292 | .1902 | .1764 | .1464 | .1280 | .1062 | .0870 | .0644 | .0408 | .0166 |
| .600 | .3290 | .2916 | .2622 | .2292 | .2020 | .1764 | .1464 | .1280 | .1062 | .0870 | .0644 | .0408 | .0166 |
| .500 | .3182 | .2638 | .2450 | .2246 | .2020 | .1764 | .1464 | .1280 | .1062 | .0870 | .0644 | .0408 | .0166 |
| .400 | .2814 | .2638 | .2450 | .2246 | .2020 | .1764 | .1464 | .1280 | .1062 | .0870 | .0644 | .0408 | .0166 |
| .300 | .2272 | .2160 | .2042 | .1914 | .1778 | .1628 | .1464 | .1280 | .1062 | .0870 | .0644 | .0408 | .0166 |
| .250 | .1952 | .1864 | .1772 | .1674 | .1570 | .1458 | .1336 | .1202 | .1050 | .0870 | .0644 | .0408 | .0166 |
| .200 | .1604 | .1538 | .1470 | .1396 | .1320 | .1236 | .1148 | .1052 | .0946 | .0828 | .0686 | .0508 | .0208 |
| .150 | .1234 | .1186 | .1138 | .1086 | .1032 | .0976 | .0914 | .0850 | .0778 | .0700 | .0612 | .0508 | .0376 |
| .100 | .0840 | .0810 | .0780 | .0748 | .0714 | .0678 | .0642 | .0602 | .0558 | .0512 | .0460 | .0402 | .0334 |
| .075 | .0636 | .0616 | .0592 | .0570 | .0552 | .0526 | .0492 | .0464 | .0432 | .0400 | .0362 | .0322 | .0276 |
| .050 | .0428 | .0414 | .0400 | .0384 | .0368 | .0352 | .0334 | .0316 | .0296 | .0276 | .0252 | .0226 | .0198 |
| .025 | .0216 | .0208 | .0202 | .0194 | .0186 | .0182 | .0170 | .0162 | .0152 | .0142 | .0130 | .0120 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0220 | -.0214 | -.0208 | -.0200 | -.0194 | -.0186 | -.0180 | -.0170 | -.0160 | -.0150 | -.0140 | -.0130 | -.0118 |
| -.050 | -.0414 | -.0432 | -.0418 | -.0404 | -.0390 | -.0376 | -.0360 | -.0344 | -.0326 | -.0308 | -.0290 | -.0268 | -.0246 |
| -.075 | -.0672 | -.0654 | -.0634 | -.0614 | -.0592 | -.0572 | -.0548 | -.0526 | -.0500 | -.0474 | -.0446 | -.0416 | -.0384 |
| -.100 | -.0904 | -.0880 | -.0854 | -.0828 | -.0800 | -.0772 | -.0744 | -.0712 | -.0680 | -.0648 | -.0612 | -.0574 | -.0532 |
| -.150 | -.1374 | -.1338 | -.1302 | -.1264 | -.1226 | -.1186 | -.1144 | -.1100 | -.1056 | -.1008 | -.0958 | -.0906 | -.0848 |
| -.200 | -.1858 | -.1812 | -.1766 | -.1718 | -.1668 | -.1618 | -.1564 | -.1510 | -.1452 | -.1392 | -.1330 | -.1264 | -.1194 |
| -.250 | -.2352 | -.2298 | -.2242 | -.2184 | -.2126 | -.2064 | -.2000 | -.1936 | -.1868 | -.1796 | -.1722 | -.1644 | -.1564 |
| -.300 | -.2858 | -.2794 | -.2730 | -.2664 | -.2596 | -.2526 | -.2452 | -.2378 | -.2300 | -.2218 | -.2134 | -.2046 | -.1954 |
| -.400 | -.3894 | -.3816 | -.3736 | -.3654 | -.3568 | -.3482 | -.3392 | -.3300 | -.3206 | -.3108 | -.3006 | -.2900 | -.2790 |
| -.500 | -.4964 | -.4872 | -.4778 | -.4682 | -.4582 | -.4482 | -.4378 | -.4272 | -.4162 | -.4050 | -.3932 | -.3812 | -.3688 |
| -.600 | -.6060 | -.5956 | -.5850 | -.5740 | -.5630 | -.5516 | -.5400 | -.5282 | -.5158 | -.5034 | -.4904 | -.4772 | -.4634 |
| -.700 | -.7190 | -.7074 | -.6958 | -.6838 | -.6716 | -.6592 | -.6464 | -.6334 | -.6200 | -.6064 | -.5924 | -.5780 | -.5632 |
| -.800 | -.8334 | -.8208 | -.8082 | -.7954 | -.7822 | -.7688 | -.7550 | -.7412 | -.7268 | -.7122 | -.6972 | -.6816 | -.6660 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.25]$$

| P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| $\frac{\Delta H}{q_0}$ | | | | | | | | | | | | | | |
| 0.800 | 0.8870 | 0.8566 | 0.8248 | 0.7914 | 0.7566 | 0.7198 | 0.6810 | 0.6394 | 0.5948 | 0.5464 | 0.4928 | 0.4324 | 0.3618 | 0.2730 |
| .700 | .7750 | .7516 | .7276 | .7026 | .6766 | .6492 | .6206 | .5904 | .5586 | .5244 | .4878 | .4480 | .4042 | .3548 |
| .600 | .6598 | .6490 | .6308 | .6120 | .5922 | .5720 | .5506 | .5286 | .5052 | .4806 | .4546 | .4270 | .3972 | .3648 |
| .500 | .5588 | .5456 | .5320 | .5178 | .5032 | .4882 | .4726 | .4562 | .4394 | .4216 | .4030 | .3834 | .3626 | .3406 |
| .400 | .4500 | .4404 | .4304 | .4202 | .4096 | .3988 | .3876 | .3760 | .3640 | .3514 | .3384 | .3246 | .3104 | .2952 |
| .300 | .3396 | .3330 | .3260 | .3190 | .3118 | .3044 | .2968 | .2890 | .2808 | .2724 | .2636 | .2546 | .2452 | .2352 |
| .250 | .2842 | .2790 | .2734 | .2678 | .2620 | .2562 | .2502 | .2438 | .2374 | .2306 | .2238 | .2166 | .2092 | .2014 |
| .200 | .2280 | .2238 | .2196 | .2154 | .2110 | .2064 | .2018 | .1970 | .1920 | .1870 | .1816 | .1762 | .1706 | .1646 |
| .150 | .1716 | .1686 | .1656 | .1624 | .1594 | .1560 | .1526 | .1492 | .1456 | .1420 | .1382 | .1344 | .1304 | .1262 |
| .100 | .1148 | .1130 | .1110 | .1090 | .1070 | .1048 | .1028 | .1006 | .0982 | .0960 | .0934 | .0910 | .0884 | .0858 |
| .075 | .0862 | .0848 | .0834 | .0818 | .0804 | .0788 | .0772 | .0756 | .0740 | .0722 | .0704 | .0686 | .0668 | .0648 |
| .050 | .0578 | .0568 | .0558 | .0548 | .0538 | .0528 | .0518 | .0508 | .0496 | .0486 | .0474 | .0462 | .0450 | .0438 |
| .025 | .0288 | .0282 | .0278 | .0274 | .0268 | .0264 | .0258 | .0254 | .0248 | .0242 | .0236 | .0232 | .0226 | .0220 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0290 | -.0286 | -.0280 | -.0276 | -.0272 | -.0266 | -.0262 | -.0256 | -.0252 | -.0246 | -.0240 | -.0236 | -.0230 | -.0224 |
| -.050 | -.0578 | -.0570 | -.0562 | -.0552 | -.0544 | -.0534 | -.0524 | -.0514 | -.0504 | -.0494 | -.0484 | -.0472 | -.0462 | -.0450 |
| -.075 | -.0872 | -.0860 | -.0846 | -.0834 | -.0820 | -.0806 | -.0792 | -.0778 | -.0762 | -.0746 | -.0732 | -.0716 | -.0698 | -.0682 |
| -.100 | -.1160 | -.1144 | -.1126 | -.1110 | -.1092 | -.1074 | -.1056 | -.1036 | -.1016 | -.0996 | -.0976 | -.0956 | -.0934 | -.0912 |
| -.150 | -.1750 | -.1724 | -.1700 | -.1674 | -.1648 | -.1622 | -.1596 | -.1568 | -.1540 | -.1510 | -.1482 | -.1450 | -.1420 | -.1388 |
| -.200 | -.2338 | -.2308 | -.2276 | -.2242 | -.2210 | -.2174 | -.2140 | -.2104 | -.2068 | -.2030 | -.1992 | -.1954 | -.1914 | -.1872 |
| -.250 | -.2930 | -.2892 | -.2854 | -.2814 | -.2774 | -.2732 | -.2690 | -.2646 | -.2602 | -.2558 | -.2512 | -.2464 | -.2416 | -.2366 |
| -.300 | -.3528 | -.3482 | -.3438 | -.3392 | -.3344 | -.3296 | -.3246 | -.3196 | -.3144 | -.3092 | -.3038 | -.2984 | -.2928 | -.2870 |
| -.400 | -.4730 | -.4674 | -.4616 | -.4558 | -.4498 | -.4438 | -.4376 | -.4312 | -.4248 | -.4182 | -.4116 | -.4046 | -.3976 | -.3904 |
| -.500 | -.5938 | -.5872 | -.5804 | -.5734 | -.5664 | -.5592 | -.5520 | -.5444 | -.5368 | -.5290 | -.5212 | -.5130 | -.5050 | -.4964 |
| -.600 | -.7158 | -.7082 | -.7004 | -.6926 | -.6844 | -.6762 | -.6680 | -.6594 | -.6510 | -.6422 | -.6330 | -.6240 | -.6146 | -.6052 |
| -.700 | -.8386 | -.8302 | -.8214 | -.8126 | -.8038 | -.7946 | -.7854 | -.7760 | -.7664 | -.7568 | -.7468 | -.7366 | -.7264 | -.7160 |
| -.800 | -.9622 | -.9530 | -.9436 | -.9340 | -.9242 | -.9144 | -.9044 | -.8940 | -.8838 | -.8732 | -.8624 | -.8514 | -.8402 | -.8288 |

| P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| $\frac{\Delta H}{q_0}$ | | | | | | | | | | | | | |
| 0.800 | 0.1336 | 0.2240 | 0.1096 | 0.1822 | 0.0892 | 0.1926 | 0.1454 | 0.0712 | 0.1120 | 0.0548 | 0.0812 | 0.0396 | 0.0256 |
| .700 | .2968 | .2888 | .2416 | .2304 | .2022 | .1774 | .1464 | .1286 | .1076 | .0884 | .0666 | .0524 | .0388 |
| .600 | .3168 | .2910 | .2624 | .2240 | .1768 | .1624 | .1334 | .1202 | .1056 | .0884 | .0666 | .0524 | .0388 |
| .500 | .2792 | .2622 | .2440 | .2240 | .1900 | .1768 | .1452 | .1334 | .1202 | .0948 | .0776 | .0614 | .0456 |
| .400 | .2248 | .2140 | .2024 | .1900 | .1768 | .1624 | .1334 | .1202 | .1056 | .0884 | .0776 | .0614 | .0456 |
| .300 | .1932 | .1846 | .1756 | .1662 | .1560 | .1452 | .1334 | .1202 | .1056 | .0884 | .0776 | .0614 | .0456 |
| .250 | .1584 | .1522 | .1454 | .1384 | .1308 | .1230 | .1144 | .1050 | .0948 | .0832 | .0700 | .0614 | .0514 |
| .200 | .1218 | .1172 | .1126 | .1076 | .1024 | .0968 | .0910 | .0846 | .0776 | .0700 | .0614 | .0514 | .0416 |
| .150 | .0830 | .0802 | .0772 | .0740 | .0708 | .0674 | .0638 | .0598 | .0556 | .0512 | .0460 | .0404 | .0348 |
| .100 | .0628 | .0608 | .0587 | .0564 | .0540 | .0514 | .0488 | .0460 | .0430 | .0398 | .0362 | .0322 | .0278 |
| .075 | .0424 | .0410 | .0396 | .0382 | .0366 | .0350 | .0334 | .0316 | .0296 | .0276 | .0252 | .0228 | .0200 |
| .050 | .0212 | .0206 | .0200 | .0192 | .0184 | .0176 | .0168 | .0160 | .0150 | .0142 | .0130 | .0118 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0218 | -.0212 | -.0204 | -.0198 | -.0190 | -.0184 | -.0176 | -.0168 | -.0158 | -.0150 | -.0140 | -.0130 | -.0118 |
| -.050 | -.0438 | -.0426 | -.0412 | -.0400 | -.0386 | -.0372 | -.0356 | -.0340 | -.0324 | -.0306 | -.0288 | -.0268 | -.0246 |
| -.075 | -.0664 | -.0646 | -.0626 | -.0608 | -.0588 | -.0566 | -.0544 | -.0522 | -.0498 | -.0472 | -.0444 | -.0416 | -.0384 |
| -.100 | -.0888 | -.0864 | -.0840 | -.0816 | -.0790 | -.0762 | -.0734 | -.0704 | -.0672 | -.0640 | -.0606 | -.0568 | -.0528 |
| -.150 | -.1354 | -.1320 | -.1286 | -.1248 | -.1212 | -.1172 | -.1132 | -.1090 | -.1046 | -.1000 | -.0952 | -.0900 | -.0846 |
| -.200 | -.1830 | -.1786 | -.1742 | -.1696 | -.1648 | -.1598 | -.1546 | -.1494 | -.1438 | -.1380 | -.1318 | -.1256 | -.1186 |
| -.250 | -.2316 | -.2262 | -.2208 | -.2154 | -.2096 | -.2038 | -.1976 | -.1912 | -.1846 | -.1778 | -.1706 | -.1632 | -.1552 |
| -.300 | -.2812 | -.2750 | -.2688 | -.2624 | -.2560 | -.2490 | -.2420 | -.2348 | -.2274 | -.2194 | -.2112 | -.2028 | -.1938 |
| -.400 | -.3832 | -.3756 | -.3678 | -.3600 | -.3518 | -.3434 | -.3348 | -.3260 | -.3168 | -.3072 | -.2974 | -.2872 | -.2764 |
| -.500 | -.4878 | -.4790 | -.4700 | -.4608 | -.4512 | -.4416 | -.4316 | -.4214 | -.4108 | -.3998 | -.3886 | -.3770 | -.3648 |
| -.600 | -.5954 | -.5854 | -.5752 | -.5650 | -.5542 | -.5434 | -.5322 | -.5208 | -.5090 | -.4970 | -.4844 | -.4716 | -.4582 |
| -.700 | -.7052 | -.6942 | -.6832 | -.6718 | -.6600 | -.6482 | -.6360 | -.6236 | -.6108 | -.5976 | -.5840 | -.5702 | -.5558 |
| -.800 | -.8170 | -.8054 | -.7934 | -.7812 | -.7686 | -.7558 | -.7426 | -.7294 | -.7156 | -.7016 | -.6870 | -.6722 | -.6570 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.30]$$

| $\frac{\Delta H}{q_o}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.8708 | 0.8116 | 0.8112 | 0.7794 | 0.7458 | 0.7106 | 0.6730 | 0.6330 | 0.5900 | 0.5434 | 0.4918 | 0.4338 | 0.3664 | 0.2824 |
| .700 | .7604 | .7384 | .7152 | .6912 | .6662 | .6400 | .6124 | .5834 | .5526 | .5198 | .4844 | .4462 | .4038 | .3562 |
| .600 | .6534 | .6366 | .6192 | .6012 | .5824 | .5628 | .5424 | .5212 | .4988 | .4750 | .4500 | .4232 | .3946 | .3634 |
| .500 | .5472 | .5348 | .5216 | .5082 | .4944 | .4798 | .4648 | .4494 | .4330 | .4160 | .3980 | .3792 | .3592 | .3378 |
| .400 | .4404 | .4312 | .4218 | .4122 | .4020 | .3916 | .3810 | .3698 | .3582 | .3462 | .3336 | .3206 | .3068 | .2922 |
| .300 | .3320 | .3258 | .3192 | .3128 | .3058 | .2988 | .2914 | .2840 | .2762 | .2682 | .2598 | .2510 | .2420 | .2324 |
| .250 | .2778 | .2726 | .2674 | .2622 | .2568 | .2536 | .2454 | .2394 | .2332 | .2268 | .2202 | .2132 | .2062 | .1986 |
| .200 | .2230 | .2190 | .2150 | .2110 | .2068 | .2026 | .1980 | .1936 | .1888 | .1840 | .1788 | .1736 | .1682 | .1626 |
| .150 | .1674 | .1646 | .1618 | .1588 | .1558 | .1528 | .1496 | .1462 | .1430 | .1394 | .1358 | .1320 | .1282 | .1242 |
| .100 | .1118 | .1100 | .1082 | .1064 | .1044 | .1024 | .1004 | .0984 | .0962 | .0940 | .0916 | .0892 | .0868 | .0844 |
| .075 | .0840 | .0828 | .0814 | .0800 | .0786 | .0772 | .0756 | .0740 | .0724 | .0708 | .0692 | .0674 | .0656 | .0638 |
| .05 | .0560 | .0550 | .0542 | .0532 | .0524 | .0514 | .0504 | .0494 | .0484 | .0474 | .0462 | .0452 | .0440 | .0428 |
| .025 | .0284 | .0278 | .0274 | .0270 | .0266 | .0260 | .0256 | .0250 | .0246 | .0240 | .0236 | .0230 | .0224 | .0218 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0282 | -.0278 | -.0274 | -.0270 | -.0266 | -.0262 | -.0256 | -.0252 | -.0248 | -.0242 | -.0236 | -.0232 | -.0226 | -.0220 |
| -.050 | -.0566 | -.0558 | -.0548 | -.0540 | -.0532 | -.0522 | -.0514 | -.0504 | -.0494 | -.0486 | -.0474 | -.0464 | -.0454 | -.0442 |
| -.075 | -.0850 | -.0838 | -.0826 | -.0812 | -.0800 | -.0788 | -.0774 | -.0760 | -.0746 | -.0732 | -.0716 | -.0702 | -.0686 | -.0670 |
| -.100 | -.1132 | -.1118 | -.1102 | -.1084 | -.1068 | -.1052 | -.1034 | -.1016 | -.0998 | -.0978 | -.0958 | -.0938 | -.0918 | -.0896 |
| -.150 | -.1702 | -.1678 | -.1656 | -.1632 | -.1608 | -.1584 | -.1558 | -.1532 | -.1506 | -.1478 | -.1450 | -.1420 | -.1392 | -.1360 |
| -.200 | -.2278 | -.2250 | -.2218 | -.2188 | -.2158 | -.2126 | -.2092 | -.2058 | -.2024 | -.1990 | -.1954 | -.1916 | -.1878 | -.1838 |
| -.250 | -.2854 | -.2816 | -.2780 | -.2742 | -.2706 | -.2666 | -.2626 | -.2586 | -.2546 | -.2502 | -.2458 | -.2414 | -.2368 | -.2322 |
| -.300 | -.3432 | -.3390 | -.3348 | -.3306 | -.3262 | -.3216 | -.3170 | -.3122 | -.3074 | -.3026 | -.2974 | -.2922 | -.2870 | -.2816 |
| -.400 | -.4594 | -.4542 | -.4488 | -.4436 | -.4380 | -.4324 | -.4266 | -.4206 | -.4146 | -.4084 | -.4022 | -.3956 | -.3890 | -.3822 |
| -.500 | -.5766 | -.5704 | -.5640 | -.5578 | -.5512 | -.5446 | -.5378 | -.5308 | -.5236 | -.5164 | -.5090 | -.5014 | -.4938 | -.4858 |
| -.600 | -.6942 | -.6872 | -.6800 | -.6728 | -.6654 | -.6578 | -.6500 | -.6422 | -.6342 | -.6260 | -.6176 | -.6090 | -.6004 | -.5914 |
| -.700 | -.8126 | -.8048 | -.7968 | -.7888 | -.7806 | -.7722 | -.7638 | -.7550 | -.7462 | -.7372 | -.7278 | -.7184 | -.7088 | -.6990 |
| -.800 | -.9322 | -.9236 | -.9148 | -.9061 | -.8974 | -.8882 | -.8788 | -.8696 | -.8598 | -.8500 | -.8400 | -.8298 | -.8196 | -.8088 |

| $\frac{\Delta H}{q_o}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.1582 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3008 | 0.2318 | 0.1298 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3288 | .2900 | .2450 | 0.1888 | 0.1058 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .3148 | .2900 | .2624 | .2314 | .1954 | 0.1506 | 0.0844 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | .2768 | .2604 | .2426 | .2234 | .2022 | .1784 | .1506 | 0.1162 | 0.0650 | ----- | ----- | ----- | ----- |
| .300 | .2224 | .2118 | .2006 | .1888 | .1760 | .1620 | .1466 | .1292 | .1092 | 0.0842 | 0.0472 | ----- | ----- |
| .250 | .1908 | .1826 | .1740 | .1648 | .1550 | .1444 | .1330 | .1204 | .1062 | .0896 | .0692 | 0.0388 | ----- |
| .200 | .1566 | .1506 | .1440 | .1373 | .1310 | .1222 | .1140 | .1048 | .0950 | .0838 | .0708 | .0546 | 0.0306 |
| .150 | .1200 | .1158 | .1112 | .1064 | .1014 | .0960 | .0902 | .0842 | .0774 | .0700 | .0618 | .0522 | .0402 |
| .100 | .0816 | .0790 | .0760 | .0730 | .0700 | .0666 | .0630 | .0594 | .0552 | .0510 | .0460 | .0406 | .0344 |
| .075 | .0618 | .0598 | .0578 | .0552 | .0532 | .0508 | .0484 | .0456 | .0428 | .0396 | .0362 | .0324 | .0280 |
| .050 | .0416 | .0402 | .0388 | .0374 | .0360 | .0344 | .0328 | .0310 | .0292 | .0272 | .0250 | .0226 | .0200 |
| .025 | .0212 | .0206 | .0198 | .0192 | .0184 | .0176 | .0167 | .0160 | .0152 | .0142 | .0132 | .0120 | .0108 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0214 | -.0208 | -.0202 | -.0196 | -.0188 | -.0182 | -.0174 | -.0166 | -.0158 | -.0150 | -.0140 | -.0130 | -.0118 |
| -.050 | -.0432 | -.0420 | -.0408 | -.0394 | -.0382 | -.0368 | -.0352 | -.0338 | -.0322 | -.0304 | -.0286 | -.0268 | -.0246 |
| -.075 | -.0652 | -.0634 | -.0616 | -.0598 | -.0578 | -.0558 | -.0538 | -.0516 | -.0492 | -.0468 | -.0442 | -.0414 | -.0384 |
| -.100 | -.0876 | -.0852 | -.0830 | -.0804 | -.0780 | -.0754 | -.0726 | -.0698 | -.0668 | -.0636 | -.0602 | -.0566 | -.0528 |
| -.150 | -.1330 | -.1284 | -.1264 | -.1228 | -.1192 | -.1156 | -.1116 | -.1076 | -.1034 | -.0990 | -.0942 | -.0892 | -.0840 |
| -.200 | -.1798 | -.1756 | -.1714 | -.1670 | -.1624 | -.1576 | -.1526 | -.1476 | -.1422 | -.1368 | -.1308 | -.1244 | -.1180 |
| -.250 | -.2272 | -.2222 | -.2172 | -.2118 | -.2064 | -.2006 | -.1948 | -.1888 | -.1824 | -.1756 | -.1688 | -.1616 | -.1538 |
| -.300 | -.2760 | -.2702 | -.2642 | -.2582 | -.2518 | -.2452 | -.2386 | -.2316 | -.2242 | -.2168 | -.2088 | -.2006 | -.1920 |
| -.400 | -.3754 | -.3682 | -.3608 | -.3534 | -.3456 | -.3376 | -.3294 | -.3208 | -.3120 | -.3028 | -.2934 | -.2834 | -.2732 |
| -.500 | -.4776 | -.4694 | -.4608 | -.4520 | -.4430 | -.4338 | -.4242 | -.4144 | -.4042 | -.3938 | -.3830 | -.3718 | -.3602 |
| -.600 | -.5822 | -.5728 | -.5632 | -.5534 | -.5434 | -.5330 | -.5224 | -.5114 | -.5002 | -.4886 | -.4766 | -.4644 | -.4516 |
| -.700 | -.6890 | -.6788 | -.6682 | -.6574 | -.6464 | -.6352 | -.6236 | -.6118 | -.5996 | -.5870 | -.5740 | -.5608 | -.5470 |
| -.800 | -.7980 | -.7870 | -.7756 | -.7640 | -.7522 | -.7400 | -.7278 | -.7150 | -.7020 | -.6886 | -.6748 | -.6608 | -.6462 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.35]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.8518 | 0.8242 | 0.7952 | 0.7648 | 0.7330 | 0.6992 | 0.6634 | 0.6252 | 0.5842 | 0.5394 | 0.4904 | 0.4350 | 0.3708 | 0.2924 |
| .700 | .7432 | .7222 | .7002 | .6776 | .6538 | .6288 | .6024 | .5748 | .5454 | .5140 | .4802 | .4434 | .4030 | .3576 |
| .600 | .6384 | .6226 | .6060 | .5890 | .5712 | .5524 | .5332 | .5128 | .4912 | .4688 | .4446 | .4190 | .3916 | .3616 |
| .500 | .5340 | .5222 | .5100 | .4972 | .4840 | .4704 | .4562 | .4414 | .4258 | .4096 | .3924 | .3744 | .3552 | .3346 |
| .400 | .4290 | .4204 | .4116 | .4026 | .3930 | .3832 | .3730 | .3626 | .3516 | .3400 | .3282 | .3156 | .3024 | .2884 |
| .300 | .3234 | .3176 | .3116 | .3054 | .2990 | .2922 | .2854 | .2782 | .2708 | .2632 | .2552 | .2470 | .2382 | .2292 |
| .250 | .2700 | .2654 | .2606 | .2556 | .2506 | .2452 | .2398 | .2342 | .2282 | .2222 | .2160 | .2094 | .2026 | .1954 |
| .200 | .2166 | .2130 | .2092 | .2054 | .2016 | .1976 | .1934 | .1890 | .1846 | .1800 | .1752 | .1702 | .1652 | .1598 |
| .150 | .1628 | .1604 | .1576 | .1550 | .1520 | .1492 | .1462 | .1432 | .1400 | .1366 | .1332 | .1296 | .1260 | .1222 |
| .100 | .1090 | .1074 | .1056 | .1038 | .1020 | .1002 | .0984 | .0964 | .0942 | .0922 | .0900 | .0878 | .0854 | .0830 |
| .075 | .0818 | .0804 | .0790 | .0778 | .0764 | .0752 | .0738 | .0722 | .0708 | .0692 | .0676 | .0660 | .0644 | .0626 |
| .050 | .0544 | .0536 | .0528 | .0518 | .0510 | .0502 | .0492 | .0482 | .0474 | .0464 | .0452 | .0442 | .0432 | .0420 |
| .025 | .0274 | .0270 | .0266 | .0262 | .0258 | .0254 | .0248 | .0244 | .0240 | .0234 | .0230 | .0224 | .0218 | .0212 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0274 | -.0270 | -.0266 | -.0262 | -.0258 | -.0254 | -.0250 | -.0244 | -.0240 | -.0236 | -.0230 | -.0226 | -.0220 | -.0216 |
| -.05 | -.0546 | -.0538 | -.0532 | -.0524 | -.0516 | -.0508 | -.0500 | -.0498 | -.0490 | -.0482 | -.0472 | -.0462 | -.0452 | -.0442 |
| -.075 | -.0822 | -.0812 | -.0800 | -.0790 | -.0778 | -.0766 | -.0752 | -.0740 | -.0726 | -.0714 | -.0700 | -.0686 | -.0670 | -.0654 |
| -.100 | -.1096 | -.1082 | -.1068 | -.1052 | -.1038 | -.1022 | -.1004 | -.0988 | -.0970 | -.0954 | -.0934 | -.0916 | -.0896 | -.0876 |
| -.150 | -.1652 | -.1632 | -.1610 | -.1588 | -.1566 | -.1544 | -.1520 | -.1496 | -.1470 | -.1444 | -.1418 | -.1392 | -.1364 | -.1334 |
| -.200 | -.2194 | -.2166 | -.2140 | -.2112 | -.2082 | -.2052 | -.2022 | -.1992 | -.1960 | -.1928 | -.1894 | -.1860 | -.1824 | -.1786 |
| -.250 | -.2760 | -.2726 | -.2694 | -.2660 | -.2626 | -.2590 | -.2554 | -.2516 | -.2476 | -.2437 | -.2396 | -.2356 | -.2312 | -.2268 |
| -.300 | -.3320 | -.3282 | -.3244 | -.3204 | -.3164 | -.3122 | -.3080 | -.3036 | -.2992 | -.2946 | -.2898 | -.2850 | -.2800 | -.2750 |
| -.400 | -.4442 | -.4394 | -.4346 | -.4296 | -.4246 | -.4194 | -.4140 | -.4086 | -.4030 | -.3974 | -.3916 | -.3856 | -.3794 | -.3730 |
| -.500 | -.5566 | -.5512 | -.5454 | -.5396 | -.5336 | -.5276 | -.5214 | -.5150 | -.5084 | -.5018 | -.4948 | -.4880 | -.4808 | -.4734 |
| -.600 | -.6688 | -.6626 | -.6562 | -.6496 | -.6428 | -.6360 | -.6290 | -.6216 | -.6144 | -.6068 | -.5992 | -.5914 | -.5832 | -.5748 |
| -.700 | -.7836 | -.7770 | -.7698 | -.7624 | -.7552 | -.7474 | -.7396 | -.7318 | -.7236 | -.7154 | -.7070 | -.6984 | -.6894 | -.6802 |
| -.800 | -.8974 | -.8898 | -.8820 | -.8744 | -.8664 | -.8582 | -.8498 | -.8412 | -.8324 | -.8236 | -.8144 | -.8052 | -.7956 | -.7858 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.1814 | 0.2402 | 0.1490 | 0.1958 | 0.1216 | 0.1564 | 0.0970 | 0.1206 | 0.0748 | 0.0874 | 0.0542 | 0.0718 | 0.0446 |
| .700 | .3048 | .2914 | .2486 | .2328 | .1984 | .1794 | .1528 | .1206 | .1110 | .1068 | .0910 | .0718 | .0566 |
| .600 | .3286 | .2888 | .2624 | .2224 | .2022 | .1794 | .1528 | .1206 | .1110 | .1068 | .0910 | .0718 | .0566 |
| .500 | .3126 | .2888 | .2624 | .2224 | .2022 | .1794 | .1528 | .1206 | .1110 | .1068 | .0910 | .0718 | .0566 |
| .400 | .2736 | .2578 | .2410 | .2224 | .2022 | .1794 | .1528 | .1206 | .1110 | .1068 | .0910 | .0718 | .0566 |
| .300 | .2196 | .2094 | .1986 | .1872 | .1748 | .1614 | .1468 | .1302 | .1110 | .1068 | .0910 | .0718 | .0566 |
| .250 | .1880 | .1800 | .1718 | .1630 | .1536 | .1434 | .1324 | .1204 | .1068 | .0910 | .0718 | .0566 | 0.0350 |
| .200 | .1540 | .1482 | .1420 | .1354 | .1284 | .1210 | .1130 | .1044 | .0950 | .0842 | .0718 | .0566 | 0.0350 |
| .150 | .1182 | .1140 | .1096 | .1050 | .1002 | .0950 | .0896 | .0838 | .0772 | .0702 | .0624 | .0532 | .0418 |
| .100 | .0806 | .0778 | .0752 | .0722 | .0692 | .0660 | .0626 | .0590 | .0552 | .0508 | .0462 | .0410 | .0350 |
| .075 | .0608 | .0588 | .0568 | .0548 | .0526 | .0502 | .0478 | .0452 | .0424 | .0394 | .0362 | .0324 | .0284 |
| .050 | .0408 | .0396 | .0382 | .0370 | .0354 | .0340 | .0324 | .0308 | .0290 | .0270 | .0250 | .0228 | .0202 |
| .025 | .0208 | .0202 | .0194 | .0188 | .0182 | .0174 | .0166 | .0158 | .0150 | .0140 | .0130 | .0120 | .0108 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0210 | -.0204 | -.0198 | -.0192 | -.0186 | -.0178 | -.0172 | -.0164 | -.0156 | -.0148 | -.0138 | -.0128 | -.0118 |
| -.05 | -.0420 | -.0410 | -.0398 | -.0386 | -.0374 | -.0360 | -.0346 | -.0332 | -.0316 | -.0300 | -.0284 | -.0260 | -.0244 |
| -.075 | -.0638 | -.0622 | -.0606 | -.0588 | -.0570 | -.0550 | -.0530 | -.0508 | -.0486 | -.0462 | -.0438 | -.0410 | -.0382 |
| -.100 | -.0856 | -.0834 | -.0812 | -.0790 | -.0766 | -.0740 | -.0714 | -.0686 | -.0658 | -.0628 | -.0596 | -.0562 | -.0524 |
| -.150 | -.1304 | -.1274 | -.1242 | -.1208 | -.1174 | -.1138 | -.1102 | -.1062 | -.1022 | -.0980 | -.0934 | -.0886 | -.0834 |
| -.200 | -.1748 | -.1710 | -.1670 | -.1628 | -.1584 | -.1540 | -.1492 | -.1444 | -.1392 | -.1340 | -.1284 | -.1224 | -.1162 |
| -.250 | -.2222 | -.2176 | -.2126 | -.2076 | -.2024 | -.1970 | -.1914 | -.1856 | -.1796 | -.1732 | -.1666 | -.1596 | -.1522 |
| -.300 | -.2696 | -.2642 | -.2586 | -.2528 | -.2468 | -.2406 | -.2342 | -.2276 | -.2208 | -.2134 | -.2060 | -.1980 | -.1898 |
| -.400 | -.3664 | -.3598 | -.3528 | -.3458 | -.3384 | -.3308 | -.3230 | -.3150 | -.3066 | -.2978 | -.2888 | -.2792 | -.2694 |
| -.500 | -.4668 | -.4580 | -.4490 | -.4416 | -.4332 | -.4244 | -.4154 | -.4062 | -.3966 | -.3866 | -.3762 | -.3656 | -.3544 |
| -.600 | -.5664 | -.5578 | -.5488 | -.5396 | -.5302 | -.5204 | -.5104 | -.5000 | -.4894 | -.4784 | -.4672 | -.4554 | -.4432 |
| -.700 | -.6710 | -.6614 | -.6518 | -.6418 | -.6314 | -.6208 | -.6098 | -.5986 | -.5872 | -.5752 | -.5630 | -.5504 | -.5374 |
| -.800 | -.7758 | -.7654 | -.7548 | -.7442 | -.7332 | -.7218 | -.7104 | -.6984 | -.6860 | -.6734 | -.6606 | -.6472 | -.6334 |

TABLE I - Continued
POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.40]$$

| $\frac{\Delta H}{q_o}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.8300 | 0.8040 | 0.7768 | 0.7484 | 0.7182 | 0.6864 | 0.6524 | 0.6162 | 0.5772 | 0.5346 | 0.4882 | 0.4356 | 0.3754 | 0.3022 |
| .700 | .7240 | .7014 | .6838 | .6624 | .6400 | .6164 | .5916 | .5654 | .5374 | .5076 | .4754 | .4404 | .4020 | .3588 |
| .600 | .6210 | .6062 | .5966 | .5748 | .5580 | .5404 | .5232 | .5030 | .4828 | .4612 | .4384 | .4140 | .3878 | .3592 |
| .500 | .5190 | .5080 | .4964 | .4848 | .4724 | .4596 | .4462 | .4322 | .4176 | .4022 | .3858 | .3686 | .3504 | .3310 |
| .400 | .4168 | .4088 | .4006 | .3922 | .3834 | .3742 | .3646 | .3546 | .3444 | .3336 | .3222 | .3102 | .2978 | .2844 |
| .300 | .3134 | .3080 | .3024 | .2966 | .2906 | .2844 | .2780 | .2714 | .2644 | .2572 | .2498 | .2418 | .2336 | .2250 |
| .250 | .2616 | .2572 | .2528 | .2482 | .2436 | .2386 | .2336 | .2282 | .2228 | .2172 | .2112 | .2050 | .1986 | .1918 |
| .200 | .2098 | .2066 | .2032 | .1996 | .1960 | .1922 | .1884 | .1844 | .1802 | .1758 | .1714 | .1668 | .1618 | .1568 |
| .150 | .1576 | .1552 | .1528 | .1502 | .1476 | .1450 | .1422 | .1394 | .1364 | .1332 | .1300 | .1268 | .1232 | .1196 |
| .100 | .1052 | .1036 | .1020 | .1004 | .0988 | .0970 | .0954 | .0934 | .0916 | .0896 | .0876 | .0856 | .0834 | .0810 |
| .075 | .0790 | .0780 | .0768 | .0756 | .0744 | .0732 | .0718 | .0704 | .0690 | .0676 | .0662 | .0646 | .0630 | .0614 |
| .050 | .0528 | .0520 | .0512 | .0504 | .0496 | .0488 | .0480 | .0472 | .0462 | .0454 | .0444 | .0434 | .0422 | .0412 |
| .025 | .0262 | .0258 | .0254 | .0252 | .0248 | .0244 | .0240 | .0236 | .0230 | .0226 | .0222 | .0216 | .0212 | .0206 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0266 | -.0262 | -.0260 | -.0256 | -.0252 | -.0248 | -.0244 | -.0240 | -.0236 | -.0232 | -.0226 | -.0222 | -.0216 | -.0212 |
| -.050 | -.0530 | -.0522 | -.0516 | -.0508 | -.0502 | -.0494 | -.0486 | -.0478 | -.0470 | -.0460 | -.0452 | -.0442 | -.0434 | -.0424 |
| -.075 | -.0796 | -.0786 | -.0776 | -.0766 | -.0754 | -.0744 | -.0732 | -.0720 | -.0708 | -.0696 | -.0682 | -.0668 | -.0654 | -.0640 |
| -.100 | -.1060 | -.1046 | -.1032 | -.1020 | -.1006 | -.0990 | -.0976 | -.0960 | -.0944 | -.0928 | -.0912 | -.0894 | -.0876 | -.0856 |
| -.150 | -.1592 | -.1574 | -.1554 | -.1534 | -.1514 | -.1492 | -.1472 | -.1450 | -.1426 | -.1402 | -.1378 | -.1352 | -.1326 | -.1300 |
| -.200 | -.2126 | -.2102 | -.2076 | -.2052 | -.2026 | -.2000 | -.1974 | -.1942 | -.1914 | -.1882 | -.1852 | -.1820 | -.1786 | -.1752 |
| -.250 | -.2660 | -.2632 | -.2602 | -.2572 | -.2540 | -.2508 | -.2474 | -.2440 | -.2404 | -.2368 | -.2330 | -.2292 | -.2252 | -.2210 |
| -.300 | -.3198 | -.3164 | -.3128 | -.3094 | -.3058 | -.3020 | -.2982 | -.2942 | -.2900 | -.2858 | -.2816 | -.2770 | -.2724 | -.2678 |
| -.400 | -.4270 | -.4228 | -.4186 | -.4142 | -.4096 | -.4050 | -.4002 | -.3952 | -.3902 | -.3850 | -.3796 | -.3740 | -.3684 | -.3626 |
| -.500 | -.5350 | -.5302 | -.5250 | -.5200 | -.5148 | -.5092 | -.5036 | -.4978 | -.4930 | -.4860 | -.4798 | -.4732 | -.4666 | -.4598 |
| -.600 | -.6430 | -.6376 | -.6318 | -.6260 | -.6202 | -.6140 | -.6076 | -.6012 | -.5946 | -.5878 | -.5808 | -.5736 | -.5662 | -.5586 |
| -.700 | -.7512 | -.7450 | -.7388 | -.7326 | -.7260 | -.7194 | -.7124 | -.7054 | -.6982 | -.6906 | -.6830 | -.6752 | -.6672 | -.6588 |
| -.800 | -.8598 | -.8532 | -.8464 | -.8398 | -.8328 | -.8256 | -.8182 | -.8106 | -.8028 | -.7950 | -.7866 | -.7782 | -.7696 | -.7608 |

| $\frac{\Delta H}{q_o}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2030 | 0.2430 | 0.1672 | 0.2522 | 0.2030 | 0.1364 | 0.1622 | 0.1090 | 0.1554 | 0.1252 | 0.0840 | 0.0908 | 0.0610 |
| .700 | .3092 | .2926 | .2522 | .2522 | .2030 | .1364 | .1622 | .1090 | .1554 | .1252 | .0840 | .0908 | .0610 |
| .600 | .3278 | .2926 | .2522 | .2522 | .2030 | .1364 | .1622 | .1090 | .1554 | .1252 | .0840 | .0908 | .0610 |
| .500 | .3100 | .2872 | .2680 | .2392 | .2216 | .2022 | .1804 | .1554 | .1308 | .1126 | .0908 | .0740 | .0500 |
| .400 | .2704 | .2854 | .2392 | .2216 | .2022 | .1804 | .1554 | .1308 | .1126 | .0908 | .0740 | .0500 | .0394 |
| .300 | .2160 | .2064 | .1960 | .1852 | .1734 | .1606 | .1466 | .1308 | .1126 | .0908 | .0740 | .0500 | .0394 |
| .250 | .1848 | .1772 | .1694 | .1610 | .1520 | .1424 | .1318 | .1204 | .1074 | .0926 | .0740 | .0500 | .0394 |
| .200 | .1514 | .1458 | .1400 | .1336 | .1270 | .1200 | .1124 | .1040 | .0950 | .0848 | .0730 | .0586 | .0394 |
| .150 | .1160 | .1120 | .1078 | .1034 | .0988 | .0940 | .0888 | .0830 | .0770 | .0702 | .0626 | .0540 | .0354 |
| .100 | .0786 | .0762 | .0736 | .0708 | .0680 | .0650 | .0618 | .0584 | .0546 | .0506 | .0462 | .0412 | .0354 |
| .075 | .0596 | .0578 | .0560 | .0540 | .0518 | .0496 | .0474 | .0448 | .0422 | .0392 | .0362 | .0326 | .0288 |
| .050 | .0400 | .0390 | .0376 | .0364 | .0350 | .0336 | .0322 | .0306 | .0288 | .0270 | .0250 | .0228 | .0204 |
| .025 | .0200 | .0196 | .0190 | .0182 | .0176 | .0170 | .0162 | .0154 | .0146 | .0138 | .0128 | .0119 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0206 | -.0202 | -.0196 | -.0190 | -.0184 | -.0176 | -.0170 | -.0162 | -.0156 | -.0146 | -.0138 | -.0128 | -.0118 |
| -.050 | -.0414 | -.0402 | -.0392 | -.0380 | -.0368 | -.0356 | -.0342 | -.0328 | -.0314 | -.0298 | -.0282 | -.0264 | -.0244 |
| -.075 | -.0626 | -.0610 | -.0594 | -.0578 | -.0560 | -.0542 | -.0522 | -.0502 | -.0480 | -.0458 | -.0434 | -.0408 | -.0380 |
| -.100 | -.0838 | -.0818 | -.0796 | -.0774 | -.0752 | -.0728 | -.0704 | -.0678 | -.0650 | -.0620 | -.0590 | -.0556 | -.0522 |
| -.150 | -.1272 | -.1244 | -.1214 | -.1182 | -.1150 | -.1116 | -.1080 | -.1044 | -.1006 | -.0964 | -.0922 | -.0876 | -.0826 |
| -.200 | -.1716 | -.1680 | -.1642 | -.1602 | -.1560 | -.1518 | -.1474 | -.1426 | -.1378 | -.1326 | -.1274 | -.1216 | -.1156 |
| -.250 | -.2168 | -.2124 | -.2078 | -.2032 | -.1982 | -.1932 | -.1878 | -.1824 | -.1766 | -.1706 | -.1642 | -.1576 | -.1504 |
| -.300 | -.2628 | -.2578 | -.2526 | -.2470 | -.2416 | -.2356 | -.2296 | -.2235 | -.2168 | -.2098 | -.2028 | -.1952 | -.1872 |
| -.400 | -.3566 | -.3504 | -.3440 | -.3372 | -.3304 | -.3234 | -.3160 | -.3084 | -.3004 | -.2922 | -.2836 | -.2746 | -.2652 |
| -.500 | -.4528 | -.4456 | -.4382 | -.4306 | -.4226 | -.4144 | -.4060 | -.3974 | -.3882 | -.3788 | -.3692 | -.3590 | -.3484 |
| -.600 | -.5508 | -.5428 | -.5346 | -.5260 | -.5172 | -.5082 | -.4988 | -.4892 | -.4792 | -.4688 | -.4592 | -.4470 | -.4356 |
| -.700 | -.6504 | -.6416 | -.6326 | -.6234 | -.6138 | -.6040 | -.5940 | -.5836 | -.5728 | -.5616 | -.5500 | -.5384 | -.5260 |
| -.800 | -.7518 | -.7424 | -.7328 | -.7228 | -.7128 | -.7022 | -.6916 | -.6804 | -.6690 | -.6572 | -.6452 | -.6326 | -.6196 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.45]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.8062 | 0.7822 | 0.7568 | 0.7302 | 0.7020 | 0.6720 | 0.6402 | 0.6062 | 0.5694 | 0.5294 | 0.4854 | 0.4362 | 0.3796 | 0.3118 |
| .700 | .7022 | .6840 | .6652 | .6452 | .6242 | .6022 | .5790 | .5542 | .5280 | .4998 | .4694 | .4364 | .4002 | .3596 |
| .600 | .6016 | .5882 | .5740 | .5592 | .5436 | .5272 | .5102 | .4922 | .4730 | .4528 | .4314 | .4082 | .3836 | .3566 |
| .500 | .5020 | .4920 | .4816 | .4706 | .4592 | .4474 | .4348 | .4218 | .4082 | .3936 | .3780 | .3622 | .3450 | .3266 |
| .400 | .4026 | .3952 | .3878 | .3800 | .3720 | .3634 | .3544 | .3454 | .3358 | .3256 | .3150 | .3040 | .2922 | .2796 |
| .300 | .3026 | .2976 | .2926 | .2874 | .2818 | .2762 | .2702 | .2642 | .2578 | .2510 | .2440 | .2366 | .2290 | .2208 |
| .250 | .2524 | .2486 | .2446 | .2404 | .2360 | .2316 | .2270 | .2220 | .2170 | .2116 | .2062 | .2004 | .1944 | .1880 |
| .200 | .2022 | .1992 | .1962 | .1930 | .1898 | .1864 | .1828 | .1792 | .1752 | .1712 | .1670 | .1626 | .1582 | .1534 |
| .150 | .1518 | .1498 | .1476 | .1452 | .1428 | .1404 | .1380 | .1352 | .1326 | .1298 | .1268 | .1236 | .1204 | .1170 |
| .100 | .1014 | .1000 | .0986 | .0972 | .0956 | .0942 | .0926 | .0908 | .0892 | .0874 | .0854 | .0834 | .0814 | .0794 |
| .075 | .0760 | .0750 | .0740 | .0728 | .0718 | .0706 | .0694 | .0682 | .0670 | .0656 | .0642 | .0628 | .0614 | .0598 |
| .050 | .0508 | .0502 | .0494 | .0488 | .0480 | .0474 | .0466 | .0458 | .0450 | .0440 | .0432 | .0422 | .0412 | .0402 |
| .025 | .0252 | .0250 | .0246 | .0242 | .0240 | .0236 | .0232 | .0228 | .0224 | .0220 | .0216 | .0212 | .0206 | .0202 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0256 | -.0254 | -.0250 | -.0246 | -.0244 | -.0240 | -.0236 | -.0232 | -.0228 | -.0224 | -.0220 | -.0216 | -.0212 | -.0206 |
| -.050 | -.0512 | -.0506 | -.0500 | -.0494 | -.0486 | -.0480 | -.0472 | -.0466 | -.0458 | -.0450 | -.0442 | -.0434 | -.0424 | -.0416 |
| -.075 | -.0764 | -.0754 | -.0746 | -.0736 | -.0726 | -.0716 | -.0706 | -.0696 | -.0684 | -.0672 | -.0662 | -.0654 | -.0646 | -.0636 |
| -.100 | -.1016 | -.1006 | -.0994 | -.0982 | -.0968 | -.0956 | -.0942 | -.0928 | -.0914 | -.0898 | -.0884 | -.0868 | -.0850 | -.0834 |
| -.150 | -.1528 | -.1512 | -.1494 | -.1476 | -.1458 | -.1440 | -.1420 | -.1400 | -.1380 | -.1358 | -.1336 | -.1312 | -.1288 | -.1264 |
| -.200 | -.2040 | -.2018 | -.1996 | -.1974 | -.1952 | -.1928 | -.1902 | -.1876 | -.1850 | -.1822 | -.1794 | -.1764 | -.1734 | -.1702 |
| -.250 | -.2552 | -.2526 | -.2500 | -.2472 | -.2446 | -.2416 | -.2386 | -.2356 | -.2324 | -.2292 | -.2256 | -.2222 | -.2186 | -.2148 |
| -.300 | -.3064 | -.3036 | -.3006 | -.2974 | -.2942 | -.2910 | -.2874 | -.2840 | -.2802 | -.2764 | -.2726 | -.2684 | -.2642 | -.2598 |
| -.400 | -.4088 | -.4052 | -.4016 | -.3978 | -.3938 | -.3896 | -.3854 | -.3810 | -.3766 | -.3718 | -.3670 | -.3620 | -.3568 | -.3516 |
| -.500 | -.5128 | -.5086 | -.5044 | -.4998 | -.4952 | -.4904 | -.4856 | -.4804 | -.4752 | -.4698 | -.4642 | -.4584 | -.4524 | -.4462 |
| -.600 | -.6144 | -.6096 | -.6050 | -.6000 | -.5948 | -.5896 | -.5840 | -.5784 | -.5724 | -.5666 | -.5604 | -.5538 | -.5474 | -.5404 |
| -.700 | -.7170 | -.7120 | -.7068 | -.7016 | -.6958 | -.6900 | -.6840 | -.6780 | -.6716 | -.6652 | -.6584 | -.6514 | -.6442 | -.6366 |
| -.800 | -.8196 | -.8142 | -.8088 | -.8030 | -.7970 | -.7908 | -.7846 | -.7780 | -.7712 | -.7644 | -.7570 | -.7496 | -.7420 | -.7342 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2230 | 0.2106 | 0.1938 | 0.1734 | 0.1504 | 0.1274 | 0.1000 | 0.0718 | 0.0426 | 0.0126 | 0.0000 | 0.0000 | 0.0000 |
| .700 | .3128 | .2572 | .2100 | .1680 | .1304 | .0924 | .0500 | .0078 | -.0342 | -.0718 | -.1044 | -.1320 | -.1546 |
| .600 | .3268 | .2936 | .2556 | .2100 | .1680 | .1304 | .0924 | .0500 | .0078 | -.0342 | -.0718 | -.1044 | -.1320 |
| .500 | .3066 | .2852 | .2614 | .2348 | .2044 | .1720 | .1364 | .0968 | .0536 | .0064 | -.0312 | -.0636 | -.0912 |
| .400 | .2660 | .2520 | .2366 | .2200 | .2016 | .1812 | .1576 | .1296 | .0926 | .0468 | -.0084 | -.0512 | -.0888 |
| .300 | .2122 | .2038 | .1934 | .1830 | .1720 | .1598 | .1464 | .1316 | .1146 | .0940 | .0772 | .0552 | .0312 |
| .250 | .1814 | .1742 | .1668 | .1588 | .1504 | .1412 | .1312 | .1202 | .1080 | .0940 | .0772 | .0552 | .0312 |
| .200 | .1484 | .1430 | .1376 | .1316 | .1254 | .1186 | .1114 | .1036 | .0948 | .0852 | .0742 | .0610 | .0436 |
| .150 | .1134 | .1098 | .1058 | .1018 | .0974 | .0928 | .0878 | .0824 | .0766 | .0702 | .0630 | .0548 | .0450 |
| .100 | .0770 | .0748 | .0722 | .0698 | .0670 | .0642 | .0610 | .0578 | .0542 | .0504 | .0462 | .0414 | .0362 |
| .075 | .0582 | .0566 | .0548 | .0528 | .0508 | .0488 | .0466 | .0442 | .0418 | .0390 | .0360 | .0328 | .0290 |
| .050 | .0392 | .0382 | .0370 | .0358 | .0344 | .0332 | .0318 | .0302 | .0286 | .0268 | .0250 | .0228 | .0206 |
| .025 | .0196 | .0192 | .0186 | .0180 | .0174 | .0166 | .0160 | .0152 | .0146 | .0136 | .0128 | .0118 | .0108 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0202 | -.0196 | -.0192 | -.0186 | -.0180 | -.0174 | -.0168 | -.0160 | -.0154 | -.0146 | -.0138 | -.0128 | -.0118 |
| -.050 | -.0406 | -.0396 | -.0386 | -.0374 | -.0364 | -.0352 | -.0338 | -.0326 | -.0312 | -.0296 | -.0280 | -.0264 | -.0244 |
| -.075 | -.0608 | -.0594 | -.0580 | -.0564 | -.0548 | -.0530 | -.0512 | -.0492 | -.0472 | -.0452 | -.0428 | -.0404 | -.0378 |
| -.100 | -.0814 | -.0796 | -.0776 | -.0756 | -.0736 | -.0712 | -.0690 | -.0664 | -.0638 | -.0612 | -.0582 | -.0550 | -.0518 |
| -.150 | -.1238 | -.1212 | -.1184 | -.1154 | -.1124 | -.1092 | -.1060 | -.1024 | -.0988 | -.0950 | -.0908 | -.0864 | -.0818 |
| -.200 | -.1670 | -.1636 | -.1600 | -.1564 | -.1524 | -.1484 | -.1440 | -.1398 | -.1352 | -.1304 | -.1254 | -.1200 | -.1142 |
| -.250 | -.2108 | -.2068 | -.2026 | -.1980 | -.1936 | -.1888 | -.1838 | -.1786 | -.1732 | -.1678 | -.1614 | -.1552 | -.1484 |
| -.300 | -.2554 | -.2508 | -.2458 | -.2408 | -.2356 | -.2302 | -.2246 | -.2186 | -.2124 | -.2060 | -.1992 | -.1920 | -.1846 |
| -.400 | -.3460 | -.3402 | -.3344 | -.3282 | -.3218 | -.3150 | -.3084 | -.3012 | -.2938 | -.2860 | -.2780 | -.2694 | -.2606 |
| -.500 | -.4438 | -.4372 | -.4304 | -.4234 | -.4160 | -.4084 | -.3966 | -.3884 | -.3800 | -.3712 | -.3620 | -.3524 | -.3424 |
| -.600 | -.5432 | -.5352 | -.5268 | -.5184 | -.5102 | -.5012 | -.4896 | -.4766 | -.4674 | -.4576 | -.4476 | -.4372 | -.4264 |
| -.700 | -.6420 | -.6322 | -.6230 | -.6134 | -.6046 | -.5958 | -.5868 | -.5776 | -.5680 | -.5576 | -.5476 | -.5372 | -.5264 |
| -.800 | -.7420 | -.7316 | -.7208 | -.7100 | -.6996 | -.6888 | -.6784 | -.6672 | -.6560 | -.6444 | -.6328 | -.6208 | -.6084 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

 $M_0 = 0.50$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.7798 | 0.7578 | 0.7346 | 0.7100 | 0.6838 | 0.6560 | 0.6264 | 0.5946 | 0.5602 | 0.5228 | 0.4816 | 0.4358 | 0.3832 | 0.3212 | 0.2598 |
| .700 | .6786 | .6620 | .6418 | .6264 | .6072 | .5868 | .5652 | .5420 | .5176 | .4912 | .4628 | .4318 | .3978 | .3598 | .3216 |
| .600 | .5810 | .5686 | .5556 | .5420 | .5278 | .5128 | .4970 | .4802 | .4624 | .4436 | .4234 | .4018 | .3786 | .3532 | .3264 |
| .500 | .4838 | .4748 | .4654 | .4554 | .4450 | .4342 | .4226 | .4106 | .3980 | .3844 | .3702 | .3550 | .3390 | .3216 | .3036 |
| .400 | .3874 | .3810 | .3744 | .3672 | .3600 | .3522 | .3442 | .3356 | .3268 | .3174 | .3076 | .2972 | .2862 | .2744 | .2616 |
| .300 | .2908 | .2864 | .2818 | .2772 | .2722 | .2672 | .2618 | .2560 | .2502 | .2440 | .2376 | .2308 | .2236 | .2160 | .2088 |
| .250 | .2426 | .2392 | .2356 | .2318 | .2280 | .2238 | .2196 | .2152 | .2106 | .2058 | .2006 | .1952 | .1896 | .1838 | .1784 |
| .200 | .1942 | .1916 | .1888 | .1860 | .1830 | .1800 | .1768 | .1734 | .1700 | .1662 | .1624 | .1584 | .1540 | .1496 | .1452 |
| .150 | .1456 | .1438 | .1418 | .1398 | .1378 | .1356 | .1332 | .1308 | .1284 | .1258 | .1230 | .1202 | .1172 | .1140 | .1108 |
| .100 | .0972 | .0960 | .0948 | .0934 | .0922 | .0908 | .0892 | .0878 | .0862 | .0846 | .0828 | .0810 | .0792 | .0772 | .0752 |
| .075 | .0728 | .0720 | .0712 | .0702 | .0692 | .0682 | .0672 | .0660 | .0648 | .0636 | .0624 | .0610 | .0598 | .0582 | .0568 |
| .050 | .0486 | .0480 | .0474 | .0468 | .0462 | .0456 | .0450 | .0444 | .0438 | .0432 | .0426 | .0418 | .0410 | .0400 | .0392 |
| .025 | .0246 | .0242 | .0240 | .0236 | .0234 | .0230 | .0226 | .0224 | .0220 | .0216 | .0212 | .0208 | .0204 | .0198 | .0192 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0244 | -.0242 | -.0238 | -.0236 | -.0232 | -.0230 | -.0226 | -.0224 | -.0220 | -.0216 | -.0212 | -.0208 | -.0204 | -.0200 | -.0196 |
| -.050 | -.0486 | -.0482 | -.0476 | -.0470 | -.0466 | -.0460 | -.0452 | -.0446 | -.0440 | -.0432 | -.0426 | -.0418 | -.0410 | -.0402 | -.0394 |
| -.075 | -.0730 | -.0724 | -.0716 | -.0708 | -.0698 | -.0690 | -.0680 | -.0672 | -.0662 | -.0650 | -.0640 | -.0628 | -.0618 | -.0604 | -.0592 |
| -.100 | -.0978 | -.0968 | -.0958 | -.0948 | -.0936 | -.0924 | -.0912 | -.0900 | -.0888 | -.0874 | -.0860 | -.0844 | -.0830 | -.0814 | -.0800 |
| -.150 | -.1462 | -.1448 | -.1434 | -.1418 | -.1402 | -.1386 | -.1370 | -.1352 | -.1332 | -.1314 | -.1294 | -.1272 | -.1250 | -.1228 | -.1206 |
| -.200 | -.1946 | -.1930 | -.1910 | -.1892 | -.1872 | -.1850 | -.1828 | -.1806 | -.1782 | -.1758 | -.1732 | -.1706 | -.1678 | -.1650 | -.1622 |
| -.250 | -.2434 | -.2412 | -.2390 | -.2366 | -.2342 | -.2318 | -.2292 | -.2264 | -.2236 | -.2208 | -.2176 | -.2146 | -.2112 | -.2078 | -.2044 |
| -.300 | -.2922 | -.2898 | -.2872 | -.2846 | -.2818 | -.2790 | -.2760 | -.2730 | -.2696 | -.2664 | -.2628 | -.2592 | -.2554 | -.2516 | -.2478 |
| -.400 | -.3898 | -.3868 | -.3836 | -.3804 | -.3770 | -.3736 | -.3698 | -.3660 | -.3622 | -.3580 | -.3538 | -.3492 | -.3446 | -.3400 | -.3354 |
| -.500 | -.4870 | -.4838 | -.4800 | -.4764 | -.4726 | -.4686 | -.4644 | -.4600 | -.4554 | -.4508 | -.4458 | -.4408 | -.4354 | -.4298 | -.4252 |
| -.600 | -.5842 | -.5806 | -.5766 | -.5724 | -.5682 | -.5638 | -.5590 | -.5544 | -.5492 | -.5440 | -.5386 | -.5330 | -.5272 | -.5212 | -.5156 |
| -.700 | -.6812 | -.6774 | -.6730 | -.6688 | -.6642 | -.6594 | -.6544 | -.6492 | -.6438 | -.6382 | -.6324 | -.6262 | -.6200 | -.6134 | -.6072 |
| -.800 | -.7780 | -.7738 | -.7694 | -.7648 | -.7598 | -.7550 | -.7496 | -.7442 | -.7384 | -.7326 | -.7264 | -.7200 | -.7134 | -.7064 | -.7000 |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2416 | 0.1138 | 0.1994 | 0.0910 | 0.1632 | 0.0768 | 0.1306 | 0.0616 | 0.1340 | 0.1008 | 0.0474 | 0.0732 | 0.0344 | 0.0282 |
| .700 | .3166 | .2650 | .2588 | .2168 | .2070 | .1734 | .1600 | .1340 | .1322 | .1162 | .0972 | .0800 | .0602 | .0474 |
| .600 | .3254 | .2944 | .2604 | .2356 | .2012 | .1820 | .1462 | .1322 | .1200 | .1086 | .0954 | .0752 | .0630 | .0474 |
| .500 | .3030 | .2826 | .2486 | .2342 | .2184 | .1806 | .1586 | .1462 | .1322 | .1162 | .0972 | .0800 | .0630 | .0474 |
| .400 | .2620 | .2486 | .2342 | .2184 | .1806 | .1700 | .1586 | .1462 | .1322 | .1162 | .0972 | .0800 | .0630 | .0474 |
| .300 | .2080 | .1994 | .1904 | .1806 | .1700 | .1586 | .1462 | .1322 | .1162 | .1028 | .0948 | .0856 | .0752 | .0630 |
| .250 | .1776 | .1710 | .1640 | .1564 | .1484 | .1398 | .1304 | .1200 | .1086 | .0948 | .0856 | .0752 | .0630 | .0474 |
| .200 | .1450 | .1400 | .1348 | .1294 | .1234 | .1172 | .1102 | .1028 | .0948 | .0856 | .0752 | .0630 | .0474 | .0282 |
| .150 | .1108 | .1074 | .1036 | .0998 | .0956 | .0914 | .0866 | .0816 | .0762 | .0700 | .0634 | .0556 | .0466 | .0366 |
| .100 | .0752 | .0730 | .0706 | .0682 | .0658 | .0630 | .0602 | .0570 | .0538 | .0502 | .0462 | .0418 | .0366 | .0292 |
| .075 | .0568 | .0552 | .0536 | .0518 | .0500 | .0480 | .0460 | .0438 | .0414 | .0388 | .0360 | .0328 | .0292 | .0206 |
| .050 | .0382 | .0372 | .0360 | .0354 | .0348 | .0342 | .0336 | .0332 | .0328 | .0324 | .0320 | .0316 | .0312 | .0308 |
| .025 | .0194 | .0188 | .0184 | .0178 | .0172 | .0166 | .0160 | .0152 | .0146 | .0138 | .0128 | .0120 | .0108 | .0098 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0196 | -.0190 | -.0186 | -.0180 | -.0176 | -.0170 | -.0164 | -.0156 | -.0150 | -.0142 | -.0136 | -.0126 | -.0118 | -.0112 |
| -.050 | -.0392 | -.0384 | -.0374 | -.0364 | -.0352 | -.0342 | -.0330 | -.0318 | -.0304 | -.0290 | -.0276 | -.0260 | -.0242 | -.0224 |
| -.075 | -.0592 | -.0578 | -.0564 | -.0550 | -.0534 | -.0518 | -.0502 | -.0484 | -.0464 | -.0444 | -.0424 | -.0400 | -.0374 | -.0348 |
| -.100 | -.0798 | -.0780 | -.0762 | -.0742 | -.0722 | -.0702 | -.0680 | -.0656 | -.0632 | -.0606 | -.0578 | -.0548 | -.0516 | -.0484 |
| -.150 | -.1204 | -.1180 | -.1154 | -.1128 | -.1098 | -.1070 | -.1038 | -.1006 | -.0972 | -.0934 | -.0896 | -.0854 | -.0810 | -.0766 |
| -.200 | -.1620 | -.1588 | -.1556 | -.1522 | -.1486 | -.1448 | -.1410 | -.1368 | -.1326 | -.1280 | -.1232 | -.1180 | -.1126 | -.1072 |
| -.250 | -.2042 | -.2004 | -.1966 | -.1926 | -.1884 | -.1840 | -.1792 | -.1744 | -.1694 | -.1640 | -.1584 | -.1524 | -.1460 | -.1396 |
| -.300 | -.2474 | -.2432 | -.2386 | -.2340 | -.2292 | -.2240 | -.2190 | -.2134 | -.2076 | -.2016 | -.1952 | -.1886 | -.1814 | -.1742 |
| -.400 | -.3450 | -.3398 | -.3342 | -.3284 | -.3226 | -.3168 | -.3108 | -.3046 | -.2982 | -.2916 | -.2848 | -.2776 | -.2702 | -.2626 |
| -.500 | -.4422 | -.4362 | -.4300 | -.4236 | -.4170 | -.4106 | -.4040 | -.3972 | -.3906 | -.3836 | -.3764 | -.3690 | -.3614 | -.3538 |
| -.600 | -.5418 | -.5352 | -.5284 | -.5214 | -.5144 | -.5070 | -.4994 | -.4916 | -.4836 | -.4754 | -.4670 | -.4584 | -.4496 | -.4406 |
| -.700 | -.6408 | -.6336 | -.6262 | -.6186 | -.6108 | -.6028 | -.5946 | -.5862 | -.5776 | -.5688 | -.5598 | -.5506 | -.5412 | -.5316 |
| -.800 | -.7394 | -.7318 | -.7242 | -.7162 | -.7080 | -.6996 | -.6910 | -.6822 | -.6732 | -.6640 | -.6546 | -.6450 | -.6354 | -.6258 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_0 = 0.55]$$

| $\frac{P_1}{\Delta h/q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 0.7514 | 0.7316 | 0.7104 | 0.6880 | 0.6640 | 0.6386 | 0.6112 | 0.5818 | 0.5500 | 0.5154 | 0.4772 | 0.4346 | 0.3860 | 0.3292 | |
| .700 | .6532 | .6384 | .6228 | .6040 | .5886 | .5700 | .5510 | .5288 | .5062 | .4818 | .4554 | .4266 | .3948 | .3596 | |
| .600 | .5582 | .5472 | .5356 | .5234 | .5104 | .4968 | .4824 | .4670 | .4506 | .4332 | .4146 | .3944 | .3728 | .3492 | |
| .500 | .4644 | .4566 | .4492 | .4392 | .4298 | .4200 | .4096 | .3986 | .3870 | .3746 | .3614 | .3474 | .3324 | .3162 | |
| .400 | .3712 | .3654 | .3596 | .3534 | .3468 | .3400 | .3326 | .3250 | .3168 | .3084 | .2992 | .2896 | .2794 | .2686 | |
| .300 | .2786 | .2748 | .2708 | .2668 | .2624 | .2578 | .2530 | .2478 | .2426 | .2368 | .2310 | .2246 | .2180 | .2110 | |
| .250 | .2318 | .2290 | .2258 | .2226 | .2192 | .2156 | .2118 | .2078 | .2036 | .1992 | .1946 | .1898 | .1846 | .1790 | |
| .200 | .1846 | .1824 | .1800 | .1776 | .1750 | .1724 | .1696 | .1666 | .1634 | .1600 | .1566 | .1530 | .1490 | .1450 | |
| .150 | .1390 | .1376 | .1358 | .1342 | .1322 | .1304 | .1284 | .1262 | .1240 | .1216 | .1192 | .1166 | .1138 | .1110 | |
| .100 | .0926 | .0916 | .0906 | .0894 | .0884 | .0872 | .0858 | .0844 | .0830 | .0816 | .0800 | .0784 | .0768 | .0750 | |
| .075 | .0692 | .0686 | .0678 | .0670 | .0662 | .0652 | .0644 | .0634 | .0624 | .0612 | .0602 | .0590 | .0578 | .0564 | |
| .050 | .0462 | .0458 | .0452 | .0448 | .0442 | .0436 | .0430 | .0424 | .0418 | .0410 | .0402 | .0396 | .0388 | .0378 | |
| .025 | .0232 | .0230 | .0228 | .0226 | .0222 | .0220 | .0218 | .0214 | .0210 | .0208 | .0204 | .0200 | .0196 | .0192 | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| -.025 | -.0232 | -.0228 | -.0228 | -.0224 | -.0222 | -.0220 | -.0216 | -.0214 | -.0210 | -.0208 | -.0204 | -.0200 | -.0196 | -.0194 | |
| -.050 | -.0464 | -.0460 | -.0456 | -.0450 | -.0446 | -.0440 | -.0436 | -.0430 | -.0424 | -.0418 | -.0410 | -.0404 | -.0396 | -.0388 | |
| -.075 | -.0698 | -.0692 | -.0684 | -.0678 | -.0670 | -.0662 | -.0654 | -.0646 | -.0638 | -.0628 | -.0620 | -.0608 | -.0598 | -.0588 | |
| -.100 | -.0924 | -.0916 | -.0908 | -.0900 | -.0890 | -.0880 | -.0870 | -.0858 | -.0848 | -.0836 | -.0824 | -.0810 | -.0796 | -.0782 | |
| -.150 | -.1390 | -.1378 | -.1366 | -.1354 | -.1340 | -.1326 | -.1312 | -.1296 | -.1280 | -.1262 | -.1246 | -.1226 | -.1206 | -.1186 | |
| -.200 | -.1854 | -.1840 | -.1824 | -.1808 | -.1790 | -.1774 | -.1754 | -.1736 | -.1714 | -.1694 | -.1670 | -.1646 | -.1622 | -.1596 | |
| -.250 | -.2312 | -.2294 | -.2276 | -.2258 | -.2238 | -.2216 | -.2194 | -.2172 | -.2146 | -.2122 | -.2094 | -.2066 | -.2038 | -.2006 | |
| -.300 | -.2774 | -.2756 | -.2736 | -.2712 | -.2690 | -.2666 | -.2640 | -.2614 | -.2586 | -.2558 | -.2526 | -.2496 | -.2462 | -.2426 | |
| -.400 | -.3694 | -.3670 | -.3646 | -.3620 | -.3592 | -.3564 | -.3534 | -.3500 | -.3468 | -.3432 | -.3396 | -.3356 | -.3316 | -.3274 | |
| -.500 | -.4612 | -.4586 | -.4558 | -.4530 | -.4498 | -.4466 | -.4430 | -.4394 | -.4356 | -.4316 | -.4274 | -.4230 | -.4184 | -.4136 | |
| -.600 | -.5526 | -.5498 | -.5468 | -.5436 | -.5402 | -.5368 | -.5330 | -.5290 | -.5248 | -.5204 | -.5158 | -.5110 | -.5060 | -.5008 | |
| -.700 | -.6438 | -.6412 | -.6380 | -.6346 | -.6310 | -.6272 | -.6234 | -.6192 | -.6146 | -.6100 | -.6052 | -.6000 | -.5946 | -.5890 | |
| -.800 | -.7348 | -.7316 | -.7286 | -.7252 | -.7214 | -.7176 | -.7134 | -.7092 | -.7046 | -.6996 | -.6946 | -.6892 | -.6836 | -.6778 | |

| $\frac{P_1}{\Delta h/q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0.800 | 0.2584 | 0.1556 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3194 | .2724 | 0.2138 | 0.1286 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3232 | .2944 | .2614 | .2230 | 0.1748 | 0.1052 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .2988 | .2798 | .2590 | .2360 | .2094 | .1786 | 0.1400 | 0.0844 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | .2570 | .2444 | .2310 | .2164 | .2002 | .1822 | .1618 | .1380 | 0.1082 | 0.0652 | ----- | ----- | ----- | ----- |
| .300 | .2036 | .1956 | .1872 | .1780 | .1682 | .1578 | .1458 | .1326 | .1178 | .1004 | 0.0788 | 0.0474 | ----- | ----- |
| .250 | .1732 | .1672 | .1606 | .1536 | .1462 | .1380 | .1292 | .1196 | .1088 | .0968 | .0824 | .0646 | 0.0388 | ----- |
| .200 | .1408 | .1362 | .1314 | .1262 | .1208 | .1148 | .1084 | .1016 | .0940 | .0856 | .0760 | .0648 | .0508 | ----- |
| .150 | .1080 | .1048 | .1014 | .0978 | .0940 | .0898 | .0854 | .0806 | .0756 | .0700 | .0636 | .0564 | .0482 | ----- |
| .100 | .0730 | .0710 | .0690 | .0668 | .0644 | .0618 | .0592 | .0562 | .0532 | .0498 | .0460 | .0418 | .0372 | ----- |
| .075 | .0550 | .0536 | .0520 | .0504 | .0488 | .0470 | .0450 | .0428 | .0406 | .0382 | .0356 | .0326 | .0294 | ----- |
| .050 | .0370 | .0360 | .0350 | .0340 | .0330 | .0318 | .0306 | .0292 | .0278 | .0262 | .0246 | .0226 | .0206 | ----- |
| .025 | .0188 | .0182 | .0178 | .0174 | .0168 | .0162 | .0156 | .0150 | .0142 | .0136 | .0128 | .0118 | .0108 | ----- |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | ----- |
| -.025 | -.0188 | -.0184 | -.0180 | -.0176 | -.0170 | -.0166 | -.0160 | -.0154 | -.0148 | -.0140 | -.0132 | -.0126 | -.0116 | ----- |
| -.050 | -.0380 | -.0372 | -.0364 | -.0354 | -.0344 | -.0334 | -.0324 | -.0312 | -.0300 | -.0286 | -.0272 | -.0258 | -.0240 | ----- |
| -.075 | -.0576 | -.0564 | -.0550 | -.0538 | -.0522 | -.0508 | -.0492 | -.0476 | -.0458 | -.0438 | -.0418 | -.0396 | -.0372 | ----- |
| -.100 | -.0768 | -.0752 | -.0734 | -.0718 | -.0700 | -.0680 | -.0660 | -.0638 | -.0616 | -.0590 | -.0566 | -.0538 | -.0508 | ----- |
| -.150 | -.1164 | -.1142 | -.1118 | -.1094 | -.1068 | -.1042 | -.1012 | -.0982 | -.0950 | -.0916 | -.0880 | -.0842 | -.0800 | ----- |
| -.200 | -.1570 | -.1540 | -.1512 | -.1480 | -.1446 | -.1412 | -.1376 | -.1338 | -.1298 | -.1256 | -.1210 | -.1162 | -.1112 | ----- |
| -.250 | -.1974 | -.1940 | -.1906 | -.1868 | -.1830 | -.1790 | -.1746 | -.1702 | -.1654 | -.1606 | -.1552 | -.1496 | -.1438 | ----- |
| -.300 | -.2390 | -.2352 | -.2310 | -.2270 | -.2224 | -.2178 | -.2130 | -.2080 | -.2026 | -.1970 | -.1910 | -.1848 | -.1782 | ----- |
| -.400 | -.3230 | -.3182 | -.3134 | -.3084 | -.3030 | -.2976 | -.2918 | -.2856 | -.2792 | -.2726 | -.2656 | -.2580 | -.2504 | ----- |
| -.500 | -.4086 | -.4032 | -.3978 | -.3922 | -.3860 | -.3798 | -.3732 | -.3664 | -.3590 | -.3516 | -.3436 | -.3354 | -.3268 | ----- |
| -.600 | -.4952 | -.4894 | -.4834 | -.4772 | -.4706 | -.4638 | -.4566 | -.4492 | -.4414 | -.4332 | -.4246 | -.4156 | -.4064 | ----- |
| -.700 | -.5832 | -.5770 | -.5706 | -.5640 | -.5570 | -.5496 | -.5422 | -.5340 | -.5258 | -.5170 | -.5080 | -.4986 | -.4888 | ----- |
| -.800 | -.6716 | -.6652 | -.6584 | -.6516 | -.6442 | -.6366 | -.6286 | -.6202 | -.6116 | -.6026 | -.5932 | -.5834 | -.5732 | ----- |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

 $[M_0 = 0.60]$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.7212 | 0.7036 | 0.6848 | 0.6646 | 0.6428 | 0.6198 | 0.5948 | 0.5680 | 0.5386 | 0.5068 | 0.4716 | 0.4326 | 0.3880 | 0.3362 |
| .700 | .6062 | .6132 | .5994 | .5846 | .5688 | .5518 | .5338 | .5146 | .4936 | .4712 | .4470 | .4204 | .3912 | .3586 |
| .600 | .5342 | .5246 | .5114 | .5036 | .4922 | .4800 | .4670 | .4530 | .4380 | .4220 | .4050 | .3866 | .3662 | .3446 |
| .500 | .4438 | .4370 | .4296 | .4218 | .4136 | .4048 | .3956 | .3856 | .3750 | .3638 | .3518 | .3388 | .3252 | .3102 |
| .400 | .3544 | .3496 | .3444 | .3390 | .3332 | .3272 | .3208 | .3138 | .3066 | .2988 | .2906 | .2818 | .2724 | .2624 |
| .300 | .2652 | .2620 | .2588 | .2552 | .2514 | .2474 | .2432 | .2386 | .2338 | .2288 | .2234 | .2178 | .2124 | .2054 |
| .250 | .2208 | .2184 | .2158 | .2130 | .2102 | .2070 | .2036 | .2000 | .1964 | .1924 | .1884 | .1840 | .1792 | .1742 |
| .200 | .1762 | .1744 | .1726 | .1704 | .1682 | .1658 | .1634 | .1608 | .1580 | .1550 | .1520 | .1486 | .1450 | .1414 |
| .150 | .1322 | .1310 | .1296 | .1282 | .1266 | .1250 | .1232 | .1214 | .1194 | .1172 | .1150 | .1128 | .1102 | .1076 |
| .100 | .0880 | .0872 | .0864 | .0854 | .0844 | .0834 | .0824 | .0812 | .0800 | .0786 | .0774 | .0758 | .0744 | .0726 |
| .075 | .0658 | .0652 | .0646 | .0640 | .0634 | .0626 | .0618 | .0610 | .0600 | .0590 | .0580 | .0570 | .0558 | .0548 |
| .050 | .0440 | .0436 | .0432 | .0428 | .0424 | .0418 | .0414 | .0408 | .0402 | .0396 | .0390 | .0382 | .0376 | .0368 |
| .025 | .0220 | .0218 | .0216 | .0214 | .0212 | .0210 | .0208 | .0204 | .0202 | .0200 | .0196 | .0192 | .0190 | .0186 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0222 | -.0220 | -.0218 | -.0216 | -.0214 | -.0212 | -.0210 | -.0206 | -.0204 | -.0202 | -.0198 | -.0194 | -.0192 | -.0188 |
| -.050 | -.0442 | -.0438 | -.0434 | -.0430 | -.0426 | -.0422 | -.0418 | -.0412 | -.0408 | -.0402 | -.0396 | -.0390 | -.0384 | -.0376 |
| -.075 | -.0660 | -.0654 | -.0650 | -.0644 | -.0638 | -.0632 | -.0624 | -.0618 | -.0610 | -.0602 | -.0594 | -.0584 | -.0576 | -.0566 |
| -.100 | -.0876 | -.0870 | -.0862 | -.0856 | -.0848 | -.0840 | -.0830 | -.0822 | -.0812 | -.0802 | -.0792 | -.0780 | -.0768 | -.0754 |
| -.150 | -.1316 | -.1306 | -.1298 | -.1288 | -.1276 | -.1266 | -.1252 | -.1240 | -.1226 | -.1212 | -.1196 | -.1180 | -.1162 | -.1144 |
| -.200 | -.1754 | -.1744 | -.1732 | -.1720 | -.1706 | -.1692 | -.1676 | -.1660 | -.1642 | -.1624 | -.1604 | -.1584 | -.1562 | -.1540 |
| -.250 | -.2186 | -.2174 | -.2160 | -.2144 | -.2130 | -.2112 | -.2094 | -.2076 | -.2054 | -.2034 | -.2010 | -.1986 | -.1960 | -.1934 |
| -.300 | -.2620 | -.2606 | -.2590 | -.2574 | -.2556 | -.2538 | -.2516 | -.2494 | -.2472 | -.2448 | -.2422 | -.2394 | -.2364 | -.2334 |
| -.400 | -.3480 | -.3464 | -.3446 | -.3426 | -.3404 | -.3382 | -.3358 | -.3332 | -.3304 | -.3276 | -.3244 | -.3212 | -.3176 | -.3140 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2730 | 0.1872 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3216 | .2788 | 0.2262 | 0.1552 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3206 | .2940 | .2636 | .2284 | 0.1854 | 0.1270 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .2942 | .2766 | .2572 | .2358 | .2114 | .1832 | 0.1488 | 0.1018 | ----- | ----- | ----- | ----- | ----- |
| .400 | .2518 | .2402 | .2276 | .2140 | .1992 | .1824 | .1636 | .1416 | 0.1150 | 0.0788 | ----- | ----- | ----- |
| .300 | .1984 | .1912 | .1834 | .1748 | .1658 | .1558 | .1448 | .1328 | .1190 | .1030 | 0.0836 | 0.0572 | ----- |
| .250 | .1690 | .1632 | .1572 | .1508 | .1438 | .1362 | .1280 | .1190 | .1092 | .0978 | .0846 | .0688 | 0.0470 |
| .200 | .1374 | .1332 | .1288 | .1240 | .1188 | .1134 | .1074 | .1010 | .0940 | .0860 | .0772 | .0668 | .0542 |
| .150 | .1050 | .1020 | .0988 | .0956 | .0920 | .0882 | .0842 | .0798 | .0750 | .0696 | .0638 | .0572 | .0496 |
| .100 | .0710 | .0692 | .0672 | .0652 | .0630 | .0606 | .0580 | .0554 | .0524 | .0494 | .0458 | .0420 | .0376 |
| .075 | .0534 | .0522 | .0508 | .0492 | .0476 | .0460 | .0442 | .0422 | .0402 | .0380 | .0354 | .0328 | .0296 |
| .050 | .0360 | .0352 | .0342 | .0332 | .0322 | .0312 | .0300 | .0288 | .0274 | .0260 | .0244 | .0226 | .0208 |
| .025 | .0182 | .0178 | .0172 | .0168 | .0164 | .0158 | .0152 | .0146 | .0140 | .0134 | .0126 | .0118 | .0108 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0184 | -.0180 | -.0176 | -.0172 | -.0168 | -.0162 | -.0158 | -.0152 | -.0146 | -.0140 | -.0132 | -.0124 | -.0116 |
| -.050 | -.0370 | -.0362 | -.0354 | -.0346 | -.0336 | -.0326 | -.0316 | -.0306 | -.0294 | -.0282 | -.0270 | -.0256 | -.0240 |
| -.075 | -.0556 | -.0544 | -.0532 | -.0520 | -.0508 | -.0494 | -.0480 | -.0464 | -.0448 | -.0430 | -.0410 | -.0390 | -.0368 |
| -.100 | -.0742 | -.0728 | -.0712 | -.0696 | -.0680 | -.0662 | -.0644 | -.0624 | -.0602 | -.0580 | -.0556 | -.0530 | -.0502 |
| -.150 | -.1126 | -.1106 | -.1084 | -.1062 | -.1038 | -.1014 | -.0986 | -.0958 | -.0928 | -.0898 | -.0864 | -.0828 | -.0790 |
| -.200 | -.1516 | -.1490 | -.1464 | -.1434 | -.1404 | -.1374 | -.1340 | -.1306 | -.1268 | -.1228 | -.1186 | -.1142 | -.1094 |
| -.250 | -.1904 | -.1876 | -.1844 | -.1810 | -.1774 | -.1738 | -.1698 | -.1658 | -.1614 | -.1568 | -.1520 | -.1468 | -.1412 |
| -.300 | -.2302 | -.2268 | -.2232 | -.2194 | -.2154 | -.2112 | -.2068 | -.2022 | -.1972 | -.1920 | -.1866 | -.1808 | -.1746 |
| -.400 | -.3102 | -.3060 | -.3018 | -.2972 | -.2924 | -.2876 | -.2822 | -.2768 | -.2710 | -.2648 | -.2584 | -.2514 | -.2442 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.65]$$

| $\frac{\Delta H}{q_o}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.6892 | 0.6738 | 0.6574 | 0.6396 | 0.6202 | 0.5996 | 0.5772 | 0.5528 | 0.5262 | 0.4972 | 0.4650 | 0.4294 | 0.3890 | 0.3420 |
| .700 | .5976 | .5864 | .5744 | .5616 | .5476 | .5326 | .5164 | .4990 | .4802 | .4598 | .4376 | .4134 | .3866 | .3568 |
| .600 | .5090 | .5010 | .4922 | .4830 | .4728 | .4620 | .4504 | .4380 | .4246 | .4102 | .3946 | .3778 | .3594 | .3394 |
| .500 | .4222 | .4164 | .4104 | .4038 | .3966 | .3890 | .3808 | .3720 | .3624 | .3524 | .3416 | .3298 | .3172 | .3036 |
| .400 | .3366 | .3328 | .3286 | .3240 | .3192 | .3140 | .3082 | .3022 | .2958 | .2888 | .2814 | .2736 | .2650 | .2560 |
| .300 | .2516 | .2492 | .2464 | .2436 | .2404 | .2370 | .2334 | .2294 | .2252 | .2208 | .2160 | .2110 | .2054 | .1996 |
| .250 | .2094 | .2074 | .2054 | .2030 | .2006 | .1980 | .1952 | .1920 | .1888 | .1854 | .1816 | .1778 | .1736 | .1690 |
| .200 | .1672 | .1658 | .1642 | .1626 | .1608 | .1588 | .1566 | .1544 | .1520 | .1494 | .1466 | .1438 | .1406 | .1372 |
| .150 | .1250 | .1240 | .1230 | .1218 | .1204 | .1190 | .1176 | .1160 | .1144 | .1126 | .1106 | .1086 | .1064 | .1040 |
| .100 | .0832 | .0826 | .0820 | .0812 | .0804 | .0796 | .0788 | .0778 | .0766 | .0756 | .0744 | .0730 | .0716 | .0702 |
| .075 | .0622 | .0618 | .0614 | .0608 | .0602 | .0596 | .0590 | .0582 | .0574 | .0566 | .0558 | .0548 | .0538 | .0528 |
| .050 | .0416 | .0412 | .0410 | .0406 | .0402 | .0398 | .0394 | .0390 | .0384 | .0380 | .0374 | .0368 | .0362 | .0354 |
| .025 | .0208 | .0206 | .0206 | .0204 | .0202 | .0200 | .0198 | .0196 | .0194 | .0190 | .0188 | .0186 | .0182 | .0178 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0206 | -.0206 | -.0204 | -.0202 | -.0200 | -.0198 | -.0198 | -.0196 | -.0192 | -.0190 | -.0188 | -.0186 | -.0182 | -.0180 |
| -.050 | -.0418 | -.0416 | -.0412 | -.0410 | -.0406 | -.0404 | -.0400 | -.0396 | -.0392 | -.0386 | -.0382 | -.0376 | -.0370 | -.0364 |
| -.075 | -.0620 | -.0618 | -.0614 | -.0610 | -.0604 | -.0600 | -.0594 | -.0588 | -.0582 | -.0576 | -.0568 | -.0560 | -.0552 | -.0544 |
| -.100 | -.0828 | -.0824 | -.0820 | -.0814 | -.0808 | -.0802 | -.0794 | -.0788 | -.0773 | -.0770 | -.0762 | -.0752 | -.0740 | -.0730 |
| -.150 | -.1240 | -.1234 | -.1228 | -.1220 | -.1212 | -.1202 | -.1192 | -.1182 | -.1170 | -.1158 | -.1146 | -.1132 | -.1116 | -.1102 |
| -.200 | -.1650 | -.1644 | -.1636 | -.1626 | -.1616 | -.1606 | -.1592 | -.1580 | -.1566 | -.1550 | -.1534 | -.1516 | -.1498 | -.1478 |
| -.250 | -.2060 | -.2052 | -.2042 | -.2032 | -.2020 | -.2006 | -.1992 | -.1976 | -.1960 | -.1942 | -.1924 | -.1904 | -.1882 | -.1858 |
| -.300 | -.2468 | -.2458 | -.2448 | -.2436 | -.2422 | -.2408 | -.2392 | -.2376 | -.2356 | -.2338 | -.2316 | -.2292 | -.2268 | -.2242 |
| -.400 | -.3276 | -.3266 | -.3256 | -.3242 | -.3228 | -.3210 | -.3192 | -.3172 | -.3152 | -.3128 | -.3102 | -.3076 | -.3046 | -.3016 |

| $\frac{\Delta H}{q_o}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2858 | 0.2128 | 0.0878 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3232 | .2842 | .2374 | 0.1766 | 0.0730 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3174 | .2928 | .2652 | .2332 | .1948 | 0.1448 | 0.0598 | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .2888 | .2728 | .2550 | .2352 | .2128 | .1872 | .1564 | 0.1162 | 0.0480 | ----- | ----- | ----- | ----- |
| .400 | .2460 | .2354 | .2240 | .2114 | .1976 | .1822 | .1650 | .1450 | .1210 | 0.0900 | 0.0372 | ----- | ----- |
| .300 | .1934 | .1866 | .1796 | .1718 | .1632 | .1542 | .1440 | .1328 | .1202 | .1056 | .0882 | 0.0656 | 0.0270 |
| .250 | .1642 | .1590 | .1536 | .1476 | .1412 | .1342 | .1266 | .1184 | .1092 | .0988 | .0868 | .0724 | .0538 |
| .200 | .1336 | .1298 | .1258 | .1214 | .1166 | .1116 | .1062 | .1002 | .0936 | .0862 | .0780 | .0686 | .0572 |
| .150 | .1016 | .0990 | .0960 | .0930 | .0898 | .0862 | .0826 | .0784 | .0740 | .0692 | .0638 | .0576 | .0506 |
| .100 | .0686 | .0670 | .0652 | .0634 | .0614 | .0592 | .0570 | .0544 | .0518 | .0488 | .0456 | .0420 | .0380 |
| .075 | .0518 | .0506 | .0492 | .0478 | .0464 | .0448 | .0432 | .0414 | .0396 | .0374 | .0352 | .0326 | .0298 |
| .050 | .0348 | .0340 | .0332 | .0324 | .0314 | .0304 | .0294 | .0282 | .0270 | .0256 | .0242 | .0226 | .0208 |
| .025 | .0176 | .0172 | .0168 | .0164 | .0158 | .0154 | .0148 | .0144 | .0138 | .0132 | .0124 | .0116 | .0108 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0176 | -.0172 | -.0168 | -.0164 | -.0160 | -.0156 | -.0152 | -.0146 | -.0140 | -.0136 | -.0128 | -.0122 | -.0114 |
| -.050 | -.0358 | -.0352 | -.0344 | -.0336 | -.0328 | -.0320 | -.0310 | -.0300 | -.0290 | -.0278 | -.0266 | -.0252 | -.0238 |
| -.075 | -.0534 | -.0526 | -.0514 | -.0504 | -.0492 | -.0480 | -.0466 | -.0452 | -.0436 | -.0420 | -.0402 | -.0384 | -.0364 |
| -.100 | -.0713 | -.0704 | -.0692 | -.0678 | -.0662 | -.0646 | -.0628 | -.0610 | -.0590 | -.0570 | -.0548 | -.0524 | -.0498 |
| -.150 | -.1084 | -.1066 | -.1048 | -.1028 | -.1006 | -.0984 | -.0960 | -.0934 | -.0906 | -.0878 | -.0846 | -.0812 | -.0778 |
| -.200 | -.1458 | -.1434 | -.1412 | -.1386 | -.1360 | -.1330 | -.1300 | -.1268 | -.1234 | -.1198 | -.1160 | -.1118 | -.1074 |
| -.250 | -.1834 | -.1808 | -.1780 | -.1750 | -.1718 | -.1684 | -.1650 | -.1612 | -.1572 | -.1530 | -.1486 | -.1436 | -.1386 |
| -.300 | -.2214 | -.2184 | -.2152 | -.2118 | -.2084 | -.2046 | -.2006 | -.1964 | -.1918 | -.1872 | -.1820 | -.1766 | -.1710 |
| -.400 | -.2982 | -.2948 | -.2910 | -.2870 | -.2828 | -.2784 | -.2736 | -.2686 | -.2634 | -.2578 | -.2518 | -.2456 | -.2390 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_\infty = 0.70]$$

| $\frac{\Delta H}{q_\infty}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.6558 | 0.6430 | 0.6288 | 0.6134 | 0.5966 | 0.5784 | 0.5582 | 0.5364 | 0.5126 | 0.4864 | 0.4574 | 0.4250 | 0.3884 | 0.3464 |
| .700 | .5680 | .5586 | .5486 | .5374 | .5254 | .5124 | .4982 | .4826 | .4658 | .4474 | .4274 | .4054 | .3812 | .3540 |
| .600 | .4830 | .4764 | .4694 | .4614 | .4528 | .4436 | .4334 | .4224 | .4106 | .3976 | .3836 | .3684 | .3518 | .3336 |
| .500 | .4002 | .3956 | .3906 | .3852 | .3792 | .3726 | .3656 | .3580 | .3496 | .3406 | .3310 | .3204 | .3090 | .2968 |
| .400 | .3180 | .3150 | .3118 | .3082 | .3040 | .2998 | .2950 | .2898 | .2842 | .2782 | .2716 | .2644 | .2568 | .2486 |
| .300 | .2374 | .2354 | .2334 | .2310 | .2286 | .2258 | .2228 | .2194 | .2158 | .2120 | .2078 | .2034 | .1984 | .1932 |
| .250 | .1976 | .1962 | .1946 | .1928 | .1908 | .1888 | .1864 | .1838 | .1810 | .1780 | .1748 | .1714 | .1676 | .1636 |
| .200 | .1576 | .1566 | .1554 | .1540 | .1528 | .1510 | .1494 | .1474 | .1454 | .1432 | .1408 | .1382 | .1356 | .1326 |
| .150 | .1178 | .1172 | .1164 | .1156 | .1146 | .1134 | .1122 | .1110 | .1096 | .1080 | .1064 | .1046 | .1026 | .1006 |
| .100 | .0782 | .0778 | .0774 | .0768 | .0762 | .0756 | .0748 | .0740 | .0732 | .0722 | .0712 | .0700 | .0688 | .0676 |
| .075 | .0588 | .0586 | .0582 | .0578 | .0574 | .0568 | .0564 | .0558 | .0552 | .0544 | .0538 | .0530 | .0520 | .0512 |
| .050 | .0392 | .0390 | .0388 | .0384 | .0382 | .0378 | .0376 | .0372 | .0368 | .0364 | .0358 | .0354 | .0348 | .0342 |
| .025 | .0194 | .0192 | .0192 | .0190 | .0190 | .0188 | .0186 | .0184 | .0182 | .0180 | .0178 | .0176 | .0174 | .0170 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0198 | -.0198 | -.0196 | -.0196 | -.0192 | -.0192 | -.0192 | -.0190 | -.0188 | -.0186 | -.0184 | -.0182 | -.0178 | -.0176 |
| -.050 | -.0388 | -.0386 | -.0386 | -.0384 | -.0378 | -.0378 | -.0376 | -.0372 | -.0368 | -.0364 | -.0360 | -.0356 | -.0352 | -.0346 |
| -.075 | -.0584 | -.0582 | -.0580 | -.0578 | -.0574 | -.0570 | -.0566 | -.0562 | -.0556 | -.0552 | -.0546 | -.0538 | -.0532 | -.0524 |
| -.100 | -.0780 | -.0776 | -.0774 | -.0770 | -.0766 | -.0762 | -.0756 | -.0750 | -.0744 | -.0736 | -.0730 | -.0720 | -.0712 | -.0702 |
| -.150 | -.1164 | -.1160 | -.1156 | -.1152 | -.1146 | -.1140 | -.1132 | -.1124 | -.1116 | -.1106 | -.1096 | -.1084 | -.1072 | -.1058 |
| -.200 | -.1548 | -.1544 | -.1540 | -.1534 | -.1526 | -.1518 | -.1510 | -.1500 | -.1490 | -.1478 | -.1464 | -.1450 | -.1434 | -.1418 |
| -.250 | -.1930 | -.1926 | -.1922 | -.1916 | -.1908 | -.1898 | -.1888 | -.1878 | -.1864 | -.1850 | -.1836 | -.1818 | -.1800 | -.1782 |
| -.300 | -.2310 | -.2306 | -.2300 | -.2294 | -.2286 | -.2276 | -.2264 | -.2252 | -.2238 | -.2224 | -.2206 | -.2188 | -.2168 | -.2146 |

| $\frac{\Delta H}{q_\infty}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2964 | 0.2336 | 0.1418 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3236 | .2884 | .2464 | 0.1946 | 0.1180 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3136 | .2912 | .2658 | .2370 | .2029 | 0.1598 | 0.0970 | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .2832 | .2684 | .2520 | .2342 | .2140 | .1906 | .1630 | 0.1284 | 0.0780 | ----- | ----- | ----- | ----- |
| .400 | .2398 | .2302 | .2194 | .2082 | .1956 | .1814 | .1658 | .1476 | .1262 | 0.0994 | 0.0604 | ----- | ----- |
| .300 | .1876 | .1816 | .1748 | .1680 | .1602 | .1518 | .1426 | .1324 | .1208 | .1076 | .0920 | 0.0724 | 0.0440 |
| .250 | .1594 | .1546 | .1496 | .1442 | .1384 | .1320 | .1250 | .1174 | .1090 | .0994 | .0886 | .0758 | .0596 |
| .200 | .1294 | .1260 | .1222 | .1182 | .1140 | .1094 | .1042 | .0988 | .0928 | .0860 | .0786 | .0700 | .0598 |
| .150 | .0984 | .0960 | .0934 | .0906 | .0878 | .0846 | .0810 | .0774 | .0732 | .0688 | .0638 | .0582 | .0518 |
| .100 | .0662 | .0648 | .0632 | .0614 | .0596 | .0578 | .0556 | .0534 | .0508 | .0482 | .0452 | .0420 | .0382 |
| .075 | .0502 | .0490 | .0478 | .0466 | .0454 | .0440 | .0424 | .0408 | .0390 | .0370 | .0350 | .0326 | .0300 |
| .050 | .0336 | .0328 | .0322 | .0314 | .0306 | .0296 | .0286 | .0276 | .0264 | .0252 | .0238 | .0224 | .0208 |
| .025 | .0168 | .0164 | .0160 | .0156 | .0152 | .0148 | .0144 | .0138 | .0134 | .0128 | .0122 | .0114 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0174 | -.0170 | -.0166 | -.0164 | -.0160 | -.0156 | -.0150 | -.0146 | -.0140 | -.0136 | -.0130 | -.0124 | -.0116 |
| -.050 | -.0342 | -.0336 | -.0328 | -.0322 | -.0314 | -.0306 | -.0298 | -.0290 | -.0280 | -.0270 | -.0258 | -.0246 | -.0234 |
| -.075 | -.0516 | -.0508 | -.0498 | -.0488 | -.0478 | -.0466 | -.0454 | -.0442 | -.0428 | -.0412 | -.0396 | -.0380 | -.0360 |
| -.100 | -.0692 | -.0680 | -.0668 | -.0656 | -.0642 | -.0628 | -.0612 | -.0596 | -.0578 | -.0558 | -.0538 | -.0516 | -.0492 |
| -.150 | -.1044 | -.1028 | -.1010 | -.0992 | -.0974 | -.0954 | -.0932 | -.0908 | -.0884 | -.0856 | -.0828 | -.0798 | -.0764 |
| -.200 | -.1400 | -.1380 | -.1358 | -.1338 | -.1314 | -.1288 | -.1260 | -.1232 | -.1200 | -.1168 | -.1132 | -.1094 | -.1054 |
| -.250 | -.1760 | -.1738 | -.1712 | -.1688 | -.1660 | -.1630 | -.1598 | -.1564 | -.1528 | -.1490 | -.1448 | -.1404 | -.1358 |
| -.300 | -.2122 | -.2096 | -.2068 | -.2040 | -.2008 | -.1976 | -.1940 | -.1902 | -.1862 | -.1818 | -.1772 | -.1722 | -.1670 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$M_o = 0.75$$

| P_1 $\frac{\Delta H}{q_o}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.6212 | 0.6104 | 0.5988 | 0.5858 | 0.5716 | 0.5558 | 0.5382 | 0.5190 | 0.4978 | 0.4746 | 0.4486 | 0.4196 | 0.3868 | 0.3492 |
| .700 | .5370 | .5298 | .5216 | .5124 | .5022 | .4912 | .4788 | .4654 | .4504 | .4342 | .4164 | .3966 | .3748 | .3504 |
| .600 | .4552 | .4502 | .4446 | .4382 | .4312 | .4234 | .4148 | .4052 | .3950 | .3836 | .3712 | .3578 | .3428 | .3264 |
| .500 | .3770 | .3736 | .3700 | .3656 | .3608 | .3554 | .3494 | .3430 | .3358 | .3280 | .3196 | .3102 | .3002 | .2890 |
| .400 | .2994 | .2974 | .2950 | .2922 | .2890 | .2854 | .2816 | .2772 | .2724 | .2672 | .2616 | .2554 | .2486 | .2414 |
| .300 | .2234 | .2220 | .2206 | .2190 | .2170 | .2148 | .2124 | .2098 | .2068 | .2034 | .1998 | .1960 | .1918 | .1872 |
| .250 | .1854 | .1844 | .1834 | .1822 | .1806 | .1790 | .1772 | .1752 | .1728 | .1704 | .1676 | .1646 | .1614 | .1578 |
| .200 | .1478 | .1472 | .1464 | .1456 | .1446 | .1434 | .1420 | .1406 | .1388 | .1370 | .1350 | .1328 | .1304 | .1278 |
| .150 | .1106 | .1102 | .1098 | .1090 | .1084 | .1076 | .1068 | .1056 | .1046 | .1032 | .1018 | .1004 | .0988 | .0970 |
| .100 | .0734 | .0732 | .0730 | .0726 | .0722 | .0716 | .0712 | .0706 | .0698 | .0690 | .0682 | .0672 | .0662 | .0652 |
| .075 | .0550 | .0548 | .0546 | .0544 | .0540 | .0538 | .0534 | .0530 | .0524 | .0518 | .0512 | .0506 | .0498 | .0490 |
| .050 | .0364 | .0364 | .0362 | .0362 | .0360 | .0358 | .0354 | .0352 | .0348 | .0346 | .0342 | .0336 | .0332 | .0328 |
| .025 | .0182 | .0180 | .0180 | .0180 | .0178 | .0178 | .0176 | .0176 | .0174 | .0172 | .0170 | .0168 | .0166 | .0164 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0184 | -.0184 | -.0182 | -.0182 | -.0182 | -.0180 | -.0180 | -.0178 | -.0176 | -.0176 | -.0174 | -.0172 | -.0170 | -.0168 |
| -.050 | -.0366 | -.0364 | -.0364 | -.0362 | -.0362 | -.0360 | -.0358 | -.0356 | -.0352 | -.0352 | -.0346 | -.0342 | -.0338 | -.0334 |
| -.075 | -.0546 | -.0546 | -.0546 | -.0544 | -.0542 | -.0540 | -.0538 | -.0536 | -.0534 | -.0530 | -.0526 | -.0516 | -.0510 | -.0502 |
| -.100 | -.0728 | -.0728 | -.0726 | -.0724 | -.0722 | -.0720 | -.0716 | -.0712 | -.0706 | -.0702 | -.0694 | -.0688 | -.0680 | -.0672 |
| -.150 | -.1086 | -.1086 | -.1084 | -.1082 | -.1078 | -.1074 | -.1070 | -.1064 | -.1058 | -.1050 | -.1042 | -.1034 | -.1024 | -.1012 |
| -.200 | -.1444 | -.1444 | -.1444 | -.1442 | -.1438 | -.1434 | -.1428 | -.1422 | -.1414 | -.1404 | -.1394 | -.1384 | -.1370 | -.1356 |
| -.250 | -.1800 | -.1800 | -.1800 | -.1798 | -.1794 | -.1790 | -.1784 | -.1776 | -.1768 | -.1758 | -.1746 | -.1732 | -.1718 | -.1702 |

| P_1 $\frac{\Delta H}{q_o}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3050 | 0.2508 | 0.1780 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3228 | .2914 | .2544 | 0.2092 | 0.1484 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3084 | .2882 | .2654 | .2396 | .2092 | 0.1718 | 0.1218 | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | .2768 | .2636 | .2490 | .2324 | .2192 | .1932 | .1686 | 0.1384 | 0.0982 | ----- | ----- | ----- | ----- |
| .400 | .2334 | .2246 | .2152 | .2048 | .1932 | .1804 | .1662 | .1498 | .1308 | 0.1074 | 0.0760 | ----- | ----- |
| .300 | .1822 | .1766 | .1708 | .1644 | .1574 | .1498 | .1412 | .1318 | .1214 | .1094 | .0954 | 0.0784 | 0.0556 |
| .250 | .1540 | .1498 | .1454 | .1406 | .1352 | .1294 | .1232 | .1162 | .1084 | .0998 | .0900 | .0784 | .0644 |
| .200 | .1250 | .1220 | .1186 | .1152 | .1112 | .1070 | .1024 | .0974 | .0918 | .0858 | .0788 | .0712 | .0620 |
| .150 | .0950 | .0928 | .0906 | .0880 | .0854 | .0826 | .0794 | .0760 | .0722 | .0682 | .0636 | .0586 | .0528 |
| .100 | .0640 | .0626 | .0612 | .0598 | .0580 | .0564 | .0544 | .0524 | .0500 | .0476 | .0448 | .0418 | .0386 |
| .075 | .0482 | .0472 | .0462 | .0452 | .0440 | .0428 | .0414 | .0398 | .0382 | .0364 | .0346 | .0324 | .0300 |
| .050 | .0322 | .0316 | .0310 | .0302 | .0294 | .0286 | .0278 | .0268 | .0258 | .0246 | .0234 | .0222 | .0206 |
| .025 | .0160 | .0158 | .0156 | .0152 | .0148 | .0144 | .0140 | .0136 | .0130 | .0126 | .0120 | .0114 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0164 | -.0162 | -.0160 | -.0156 | -.0152 | -.0150 | -.0146 | -.0140 | -.0136 | -.0132 | -.0126 | -.0120 | -.0114 |
| -.050 | -.0330 | -.0324 | -.0318 | -.0312 | -.0306 | -.0300 | -.0292 | -.0284 | -.0274 | -.0266 | -.0256 | -.0244 | -.0232 |
| -.075 | -.0496 | -.0488 | -.0480 | -.0472 | -.0462 | -.0452 | -.0442 | -.0430 | -.0418 | -.0404 | -.0388 | -.0372 | -.0356 |
| -.100 | -.0664 | -.0654 | -.0644 | -.0632 | -.0620 | -.0608 | -.0594 | -.0578 | -.0562 | -.0546 | -.0526 | -.0506 | -.0484 |
| -.150 | -.1000 | -.0986 | -.0972 | -.0956 | -.0940 | -.0922 | -.0902 | -.0882 | -.0858 | -.0834 | -.0808 | -.0780 | -.0750 |
| -.200 | -.1342 | -.1326 | -.1308 | -.1288 | -.1268 | -.1244 | -.1220 | -.1194 | -.1166 | -.1136 | -.1104 | -.1070 | -.1032 |
| -.250 | -.1684 | -.1666 | -.1646 | -.1622 | -.1598 | -.1572 | -.1544 | -.1514 | -.1482 | -.1446 | -.1410 | -.1370 | -.1326 |

NATIONAL ADVISORY
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TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

 $M_o = 0.80$

| P_1 $\frac{\Delta H}{q_o}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5851 | 0.5776 | 0.5680 | 0.5576 | 0.5456 | 0.5322 | 0.5172 | 0.5008 | 0.4822 | 0.4616 | 0.4386 | 0.4128 | 0.3838 | 0.3501 |
| .700 | .5056 | .5002 | .4938 | .4866 | .4784 | .4692 | .4588 | .4472 | .4341 | .4202 | .4044 | .3868 | .3676 | .3458 |
| .600 | .4288 | .4252 | .4212 | .4162 | .4106 | .4042 | .3972 | .3892 | .3802 | .3706 | .3598 | .3478 | .3346 | .3200 |
| .500 | .3538 | .3518 | .3490 | .3458 | .3422 | .3380 | .3332 | .3278 | .3218 | .3152 | .3078 | .2998 | .2908 | .2810 |
| .400 | .2808 | .2796 | .2780 | .2760 | .2738 | .2712 | .2680 | .2646 | .2606 | .2564 | .2514 | .2462 | .2402 | .2338 |
| .300 | .2090 | .2084 | .2076 | .2064 | .2052 | .2036 | .2018 | .1996 | .1972 | .1946 | .1916 | .1882 | .1846 | .1806 |
| .250 | .1734 | .1732 | .1726 | .1718 | .1710 | .1698 | .1684 | .1668 | .1650 | .1630 | .1608 | .1582 | .1554 | .1524 |
| .200 | .1384 | .1382 | .1378 | .1374 | .1366 | .1358 | .1348 | .1338 | .1324 | .1310 | .1294 | .1276 | .1254 | .1232 |
| .150 | .1030 | .1030 | .1028 | .1026 | .1020 | .1016 | .1010 | .1002 | .0994 | .0984 | .0972 | .0960 | .0946 | .0930 |
| .100 | .0684 | .0684 | .0684 | .0682 | .0680 | .0676 | .0672 | .0668 | .0662 | .0656 | .0650 | .0642 | .0634 | .0624 |
| .075 | .0514 | .0514 | .0512 | .0512 | .0510 | .0508 | .0506 | .0502 | .0498 | .0494 | .0490 | .0484 | .0478 | .0472 |
| .050 | .0340 | .0340 | .0340 | .0340 | .0338 | .0338 | .0336 | .0334 | .0332 | .0328 | .0326 | .0322 | .0318 | .0314 |
| .025 | .0170 | .0170 | .0170 | .0168 | .0168 | .0168 | .0166 | .0166 | .0166 | .0164 | .0162 | .0160 | .0158 | .0156 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0172 | -.0172 | -.0172 | -.0172 | -.0170 | -.0170 | -.0170 | -.0168 | -.0168 | -.0166 | -.0166 | -.0164 | -.0162 | -.0160 |
| -.050 | -.0336 | -.0336 | -.0336 | -.0336 | -.0336 | -.0334 | -.0334 | -.0332 | -.0330 | -.0328 | -.0326 | -.0322 | -.0320 | -.0316 |
| -.075 | -.0506 | -.0508 | -.0508 | -.0508 | -.0506 | -.0506 | -.0506 | -.0502 | -.0500 | -.0496 | -.0494 | -.0488 | -.0484 | -.0480 |
| -.100 | -.0676 | -.0676 | -.0676 | -.0676 | -.0674 | -.0674 | -.0672 | -.0670 | -.0668 | -.0664 | -.0658 | -.0654 | -.0648 | -.0642 |
| -.150 | -.1010 | -.1012 | -.1012 | -.1012 | -.1012 | -.1010 | -.1008 | -.1006 | -.1002 | -.0996 | -.0990 | -.0982 | -.0976 | -.0966 |
| -.200 | -.1342 | -.1344 | -.1346 | -.1348 | -.1348 | -.1346 | -.1344 | -.1340 | -.1336 | -.1330 | -.1324 | -.1314 | -.1304 | -.1294 |

| P_1 $\frac{\Delta H}{q_o}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3116 | 0.2652 | 0.2046 | 0.1110 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3212 | .2930 | .2604 | .2216 | 0.1708 | 0.0926 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .3036 | .2856 | .2652 | .2418 | .2148 | .1826 | 0.1408 | 0.0764 | ----- | ----- | ----- | ----- | ----- |
| .500 | .2702 | .2582 | .2450 | .2304 | .2138 | .1950 | .1732 | .1472 | 0.1134 | 0.0614 | ----- | ----- | ----- |
| .400 | .2268 | .2190 | .2104 | .2010 | .1906 | .1792 | .1662 | .1516 | .1346 | .1142 | 0.0880 | 0.0478 | ----- |
| .300 | .1762 | .1714 | .1660 | .1604 | .1540 | .1470 | .1394 | .1310 | .1214 | .1106 | .0982 | .0834 | 0.0642 |
| .250 | .1490 | .1454 | .1414 | .1370 | .1322 | .1270 | .1212 | .1150 | .1080 | .1002 | .0912 | .0810 | .0686 |
| .200 | .1208 | .1182 | .1152 | .1120 | .1084 | .1046 | .1006 | .0960 | .0910 | .0854 | .0792 | .0722 | .0640 |
| .150 | .0914 | .0896 | .0876 | .0854 | .0830 | .0804 | .0776 | .0744 | .0710 | .0674 | .0632 | .0586 | .0534 |
| .100 | .0614 | .0604 | .0592 | .0578 | .0564 | .0548 | .0530 | .0512 | .0490 | .0468 | .0444 | .0416 | .0386 |
| .075 | .0464 | .0456 | .0448 | .0438 | .0426 | .0416 | .0404 | .0390 | .0374 | .0358 | .0342 | .0322 | .0300 |
| .050 | .0310 | .0304 | .0298 | .0292 | .0286 | .0278 | .0270 | .0262 | .0252 | .0242 | .0232 | .0220 | .0206 |
| .025 | .0154 | .0152 | .0150 | .0146 | .0144 | .0140 | .0136 | .0132 | .0128 | .0122 | .0118 | .0112 | .0106 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0158 | -.0156 | -.0154 | -.0150 | -.0148 | -.0144 | -.0140 | -.0138 | -.0134 | -.0128 | -.0124 | -.0118 | -.0112 |
| -.050 | -.0312 | -.0308 | -.0304 | -.0298 | -.0292 | -.0286 | -.0280 | -.0272 | -.0264 | -.0256 | -.0246 | -.0236 | -.0226 |
| -.075 | -.0474 | -.0468 | -.0460 | -.0452 | -.0444 | -.0436 | -.0426 | -.0416 | -.0404 | -.0392 | -.0378 | -.0364 | -.0348 |
| -.100 | -.0634 | -.0626 | -.0618 | -.0608 | -.0598 | -.0586 | -.0574 | -.0560 | -.0546 | -.0530 | -.0512 | -.0494 | -.0474 |
| -.150 | -.0956 | -.0946 | -.0932 | -.0920 | -.0904 | -.0890 | -.0872 | -.0854 | -.0834 | -.0812 | -.0788 | -.0762 | -.0734 |
| -.200 | -.1282 | -.1268 | -.1254 | -.1236 | -.1218 | -.1200 | -.1178 | -.1154 | -.1130 | -.1104 | -.1074 | -.1042 | -.1010 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.85]$$

| P_1 $\frac{\Delta H}{q_o}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5490 | 0.5434 | 0.5366 | 0.5284 | 0.5188 | 0.5078 | 0.4954 | 0.4814 | 0.4654 | 0.4476 | 0.4276 | 0.4050 | 0.3794 | 0.3500 |
| .700 | .4732 | .4698 | .4654 | .4600 | .4538 | .4464 | .4380 | .4284 | .4174 | .4052 | .3916 | .3764 | .3592 | .3400 |
| .600 | .4008 | .3988 | .3962 | .3928 | .3888 | .3838 | .3782 | .3718 | .3644 | .3560 | .3468 | .3364 | .3248 | .3120 |
| .500 | .3302 | .3292 | .3278 | .3258 | .3232 | .3202 | .3166 | .3122 | .3074 | .3018 | .2958 | .2888 | .2810 | .2724 |
| .400 | .2616 | .2612 | .2606 | .2596 | .2580 | .2562 | .2540 | .2514 | .2482 | .2448 | .2400 | .2362 | .2312 | .2256 |
| .300 | .1944 | .1944 | .1942 | .1938 | .1930 | .1920 | .1908 | .1894 | .1876 | .1854 | .1830 | .1802 | .1772 | .1738 |
| .250 | .1612 | .1614 | .1614 | .1610 | .1606 | .1600 | .1590 | .1580 | .1566 | .1550 | .1532 | .1512 | .1488 | .1464 |
| .200 | .1284 | .1288 | .1288 | .1286 | .1284 | .1280 | .1274 | .1266 | .1256 | .1246 | .1232 | .1218 | .1202 | .1182 |
| .150 | .0958 | .0960 | .0962 | .0962 | .0960 | .0958 | .0954 | .0950 | .0942 | .0936 | .0928 | .0918 | .0906 | .0894 |
| .100 | .0636 | .0638 | .0640 | .0640 | .0640 | .0638 | .0636 | .0634 | .0630 | .0626 | .0620 | .0614 | .0608 | .0600 |
| .075 | .0476 | .0476 | .0478 | .0478 | .0478 | .0476 | .0476 | .0476 | .0472 | .0468 | .0464 | .0460 | .0456 | .0450 |
| .050 | .0316 | .0318 | .0318 | .0318 | .0318 | .0318 | .0318 | .0316 | .0314 | .0312 | .0310 | .0308 | .0304 | .0302 |
| .025 | .0154 | .0156 | .0156 | .0156 | .0156 | .0156 | .0156 | .0156 | .0154 | .0154 | .0152 | .0152 | .0150 | .0148 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0158 | -.0160 | -.0160 | -.0160 | -.0160 | -.0160 | -.0160 | -.0160 | -.0160 | -.0158 | -.0158 | -.0156 | -.0154 | -.0154 |
| -.050 | -.0316 | -.0316 | -.0318 | -.0318 | -.0318 | -.0318 | -.0318 | -.0318 | -.0316 | -.0316 | -.0314 | -.0312 | -.0308 | -.0306 |
| -.075 | -.0472 | -.0474 | -.0476 | -.0476 | -.0476 | -.0476 | -.0476 | -.0476 | -.0474 | -.0472 | -.0470 | -.0468 | -.0464 | -.0460 |
| -.100 | -.0628 | -.0630 | -.0632 | -.0634 | -.0634 | -.0634 | -.0634 | -.0634 | -.0632 | -.0630 | -.0628 | -.0624 | -.0620 | -.0614 |
| -.150 | -.0934 | -.0940 | -.0944 | -.0946 | -.0948 | -.0950 | -.0950 | -.0948 | -.0946 | -.0944 | -.0940 | -.0936 | -.0930 | -.0922 |
| -.200 | -.1242 | -.1250 | -.1254 | -.1260 | -.1262 | -.1264 | -.1264 | -.1264 | -.1262 | -.1260 | -.1256 | -.1250 | -.1244 | -.1236 |

| P_1 $\frac{\Delta H}{q_o}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3160 | 0.2756 | 0.2254 | 0.1558 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3182 | .2936 | .2648 | .2308 | 0.1888 | 0.1304 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .2976 | .2816 | .2634 | .2428 | .2190 | .1908 | .1558 | 0.1076 | ----- | ----- | ----- | ----- | ----- |
| .500 | .2630 | .2524 | .2406 | .2274 | .2128 | .1960 | .1766 | .1538 | 0.1256 | 0.0868 | ----- | ----- | ----- |
| .400 | .2194 | .2126 | .2052 | .1968 | .1874 | .1772 | .1656 | .1524 | .1374 | .1196 | 0.0976 | 0.0674 | ----- |
| .300 | .1700 | .1658 | .1612 | .1560 | .1504 | .1442 | .1374 | .1298 | .1212 | .1116 | .1006 | .0874 | 0.0714 |
| .250 | .1434 | .1402 | .1368 | .1328 | .1286 | .1240 | .1188 | .1132 | .1068 | .0998 | .0918 | .0828 | .0720 |
| .200 | .1162 | .1138 | .1112 | .1084 | .1054 | .1020 | .0984 | .0942 | .0896 | .0846 | .0790 | .0728 | .0656 |
| .150 | .0878 | .0864 | .0848 | .0826 | .0806 | .0782 | .0758 | .0730 | .0698 | .0666 | .0628 | .0586 | .0540 |
| .100 | .0592 | .0582 | .0572 | .0560 | .0546 | .0532 | .0518 | .0500 | .0482 | .0462 | .0436 | .0414 | .0388 |
| .075 | .0444 | .0438 | .0430 | .0422 | .0412 | .0402 | .0392 | .0380 | .0366 | .0352 | .0336 | .0318 | .0298 |
| .050 | .0298 | .0292 | .0288 | .0282 | .0276 | .0270 | .0264 | .0256 | .0248 | .0238 | .0228 | .0218 | .0204 |
| .025 | .0146 | .0144 | .0142 | .0140 | .0136 | .0134 | .0130 | .0128 | .0124 | .0118 | .0114 | .0108 | .0104 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0152 | -.0150 | -.0148 | -.0146 | -.0142 | -.0140 | -.0136 | -.0134 | -.0130 | -.0126 | -.0122 | -.0116 | -.0112 |
| -.050 | -.0302 | -.0300 | -.0296 | -.0290 | -.0286 | -.0280 | -.0274 | -.0268 | -.0260 | -.0254 | -.0244 | -.0236 | -.0226 |
| -.075 | -.0454 | -.0450 | -.0444 | -.0438 | -.0430 | -.0422 | -.0414 | -.0404 | -.0394 | -.0384 | -.0372 | -.0358 | -.0344 |
| -.100 | -.0608 | -.0602 | -.0594 | -.0586 | -.0576 | -.0566 | -.0556 | -.0544 | -.0532 | -.0518 | -.0502 | -.0484 | -.0466 |
| -.150 | -.0914 | -.0906 | -.0896 | -.0884 | -.0872 | -.0858 | -.0844 | -.0826 | -.0810 | -.0788 | -.0768 | -.0746 | -.0720 |
| -.200 | -.1226 | -.1214 | -.1202 | -.1188 | -.1174 | -.1158 | -.1138 | -.1118 | -.1096 | -.1072 | -.1046 | -.1018 | -.0988 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.90]$$

| $\frac{\Delta H}{q_o}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5122 | 0.5088 | 0.5044 | 0.4986 | 0.4914 | 0.4828 | 0.4730 | 0.4614 | 0.4480 | 0.4328 | .4154 | 0.3958 | 0.3736 | 0.3480 |
| .700 | .4408 | .4394 | .4368 | .4334 | .4290 | .4234 | .4168 | .4090 | .4002 | .3900 | .3782 | .3652 | .3502 | .3334 |
| .600 | .3726 | .3722 | .3712 | .3692 | .3666 | .3632 | .3590 | .3538 | .3480 | .3412 | .3334 | .3246 | .3146 | .3034 |
| .500 | .3066 | .3070 | .3066 | .3058 | .3044 | .3024 | .2998 | .2966 | .2928 | .2884 | .2834 | .2776 | .2710 | .2636 |
| .400 | .2424 | .2430 | .2432 | .2430 | .2426 | .2414 | .2400 | .2382 | .2360 | .2332 | .2300 | .2264 | .2222 | .2174 |
| .300 | .1798 | .1806 | .1810 | .1812 | .1810 | .1806 | .1800 | .1790 | .1778 | .1762 | .1744 | .1722 | .1696 | .1668 |
| .250 | .1492 | .1500 | .1504 | .1506 | .1506 | .1504 | .1500 | .1494 | .1486 | .1474 | .1460 | .1444 | .1426 | .1404 |
| .200 | .1190 | .1198 | .1202 | .1204 | .1206 | .1204 | .1200 | .1198 | .1192 | .1184 | .1176 | .1164 | .1150 | .1136 |
| .150 | .0886 | .0892 | .0896 | .0898 | .0900 | .0900 | .0898 | .0896 | .0892 | .0888 | .0882 | .0874 | .0866 | .0856 |
| .100 | .0588 | .0590 | .0594 | .0596 | .0598 | .0598 | .0596 | .0594 | .0592 | .0588 | .0584 | .0578 | .0572 | .0562 |
| .075 | .0440 | .0442 | .0444 | .0446 | .0448 | .0448 | .0446 | .0444 | .0442 | .0440 | .0436 | .0432 | .0428 | .0422 |
| .050 | .0292 | .0294 | .0296 | .0296 | .0298 | .0298 | .0296 | .0294 | .0292 | .0290 | .0286 | .0282 | .0278 | .0272 |
| .025 | .0142 | .0144 | .0144 | .0146 | .0146 | .0146 | .0146 | .0146 | .0146 | .0146 | .0144 | .0144 | .0142 | .0142 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0146 | -.0148 | -.0148 | -.0150 | -.0150 | -.0150 | -.0150 | -.0150 | -.0150 | -.0150 | -.0150 | -.0148 | -.0148 | -.0146 |
| -.050 | -.0290 | -.0292 | -.0294 | -.0296 | -.0298 | -.0298 | -.0298 | -.0298 | -.0298 | -.0298 | -.0296 | -.0296 | -.0294 | -.0292 |
| -.075 | -.0434 | -.0438 | -.0440 | -.0444 | -.0446 | -.0448 | -.0448 | -.0448 | -.0448 | -.0448 | -.0446 | -.0444 | -.0440 | -.0438 |
| -.100 | -.0578 | -.0582 | -.0586 | -.0590 | -.0592 | -.0594 | -.0596 | -.0596 | -.0596 | -.0596 | -.0594 | -.0590 | -.0588 | -.0584 |
| -.150 | -.0864 | -.0872 | -.0878 | -.0882 | -.0888 | -.0890 | -.0892 | -.0894 | -.0894 | -.0894 | -.0892 | -.0890 | -.0886 | -.0880 |
| -.200 | -.1142 | -.1152 | -.1160 | -.1168 | -.1174 | -.1178 | -.1182 | -.1184 | -.1186 | -.1186 | -.1184 | -.1182 | -.1178 | -.1172 |

| $\frac{\Delta H}{q_o}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3184 | 0.2836 | 0.2412 | 0.1862 | 0.0994 | -.0156 | -.0834 | -.1592 | -.2352 | -.3112 | -.3872 | -.4632 | -.5392 |
| .700 | .3144 | .2928 | .2676 | .2382 | .2026 | .1562 | .1098 | .0634 | .0170 | -.0294 | -.0858 | -.1422 | -.1986 |
| .600 | .2908 | .2766 | .2608 | .2426 | .2216 | .1972 | .1676 | .1352 | .1028 | .0704 | .0380 | .0056 | -.0268 |
| .500 | .2554 | .2462 | .2358 | .2242 | .2110 | .1962 | .1792 | .1594 | .1352 | .1042 | .0756 | .0470 | .0184 |
| .400 | .2122 | .2062 | .1996 | .1922 | .1840 | .1748 | .1646 | .1528 | .1396 | .1240 | .1052 | .0810 | .0432 |
| .300 | .1636 | .1600 | .1560 | .1514 | .1466 | .1410 | .1350 | .1282 | .1206 | .1120 | .1022 | .0908 | .0770 |
| .250 | .1380 | .1354 | .1322 | .1290 | .1252 | .1210 | .1164 | .1114 | .1058 | .0994 | .0924 | .0842 | .0748 |
| .200 | .1118 | .1098 | .1076 | .1052 | .1026 | .0994 | .0962 | .0924 | .0884 | .0840 | .0790 | .0734 | .0668 |
| .150 | .0844 | .0830 | .0816 | .0800 | .0780 | .0760 | .0738 | .0714 | .0686 | .0656 | .0622 | .0584 | .0542 |
| .100 | .0566 | .0558 | .0550 | .0538 | .0528 | .0516 | .0502 | .0488 | .0470 | .0452 | .0432 | .0410 | .0386 |
| .075 | .0426 | .0420 | .0414 | .0406 | .0398 | .0390 | .0380 | .0370 | .0358 | .0344 | .0330 | .0316 | .0298 |
| .050 | .0284 | .0282 | .0278 | .0272 | .0268 | .0262 | .0256 | .0250 | .0242 | .0234 | .0224 | .0214 | .0204 |
| .025 | .0140 | .0138 | .0136 | .0134 | .0132 | .0130 | .0126 | .0124 | .0120 | .0116 | .0112 | .0108 | .0102 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0146 | -.0144 | -.0142 | -.0140 | -.0138 | -.0136 | -.0132 | -.0130 | -.0126 | -.0122 | -.0118 | -.0114 | -.0110 |
| -.050 | -.0290 | -.0286 | -.0284 | -.0280 | -.0276 | -.0270 | -.0266 | -.0260 | -.0254 | -.0246 | -.0240 | -.0230 | -.0222 |
| -.075 | -.0434 | -.0430 | -.0426 | -.0420 | -.0414 | -.0408 | -.0400 | -.0392 | -.0382 | -.0372 | -.0362 | -.0350 | -.0338 |
| -.100 | -.0580 | -.0574 | -.0568 | -.0562 | -.0554 | -.0546 | -.0536 | -.0526 | -.0514 | -.0502 | -.0488 | -.0474 | -.0458 |
| -.150 | -.0874 | -.0868 | -.0860 | -.0850 | -.0840 | -.0828 | -.0816 | -.0802 | -.0786 | -.0768 | -.0750 | -.0730 | -.0706 |
| -.200 | -.1166 | -.1158 | -.1148 | -.1136 | -.1124 | -.1110 | -.1094 | -.1076 | -.1058 | -.1036 | -.1014 | -.0988 | -.0962 |

TABLE I - Continued

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Continued

$$[M_o = 0.95]$$

| $\frac{\Delta H}{q_o}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4752 | 0.4744 | 0.4720 | 0.4686 | 0.4636 | 0.4574 | 0.4498 | 0.4406 | 0.4296 | 0.4170 | 0.4024 | 0.3858 | 0.3666 | 0.3446 |
| .700 | .4086 | .4090 | .4082 | .4066 | .4040 | .4002 | .3954 | .3894 | .3824 | .3740 | .3644 | .3532 | .3406 | .3260 |
| .600 | .3448 | .3458 | .3460 | .3456 | .3444 | .3424 | .3396 | .3358 | .3314 | .3260 | .3196 | .3124 | .3040 | .2944 |
| .500 | .2834 | .2848 | .2856 | .2858 | .2856 | .2846 | .2832 | .2810 | .2784 | .2750 | .2710 | .2662 | .2608 | .2546 |
| .400 | .2238 | .2252 | .2262 | .2268 | .2270 | .2268 | .2262 | .2252 | .2236 | .2218 | .2194 | .2164 | .2130 | .2090 |
| .300 | .1658 | .1672 | .1682 | .1688 | .1694 | .1696 | .1694 | .1690 | .1682 | .1672 | .1660 | .1642 | .1622 | .1600 |
| .250 | .1374 | .1386 | .1396 | .1404 | .1408 | .1410 | .1410 | .1408 | .1404 | .1398 | .1388 | .1376 | .1362 | .1344 |
| .200 | .1090 | .1100 | .1108 | .1116 | .1120 | .1122 | .1124 | .1122 | .1120 | .1116 | .1110 | .1102 | .1092 | .1080 |
| .150 | .0816 | .0822 | .0830 | .0836 | .0840 | .0842 | .0844 | .0844 | .0842 | .0840 | .0836 | .0832 | .0824 | .0816 |
| .100 | .0538 | .0544 | .0548 | .0552 | .0556 | .0558 | .0560 | .0560 | .0560 | .0558 | .0556 | .0554 | .0550 | .0546 |
| .075 | .0404 | .0408 | .0412 | .0416 | .0418 | .0420 | .0420 | .0422 | .0420 | .0420 | .0420 | .0418 | .0414 | .0412 |
| .050 | .0266 | .0270 | .0272 | .0274 | .0276 | .0276 | .0278 | .0278 | .0278 | .0278 | .0278 | .0276 | .0274 | .0272 |
| .025 | .0134 | .0134 | .0136 | .0136 | .0138 | .0138 | .0138 | .0140 | .0140 | .0140 | .0138 | .0138 | .0138 | .0136 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0134 | -.0136 | -.0138 | -.0138 | -.0140 | -.0140 | -.0140 | -.0142 | -.0142 | -.0142 | -.0142 | -.0140 | -.0140 | -.0140 |
| -.050 | -.0266 | -.0270 | -.0272 | -.0274 | -.0276 | -.0278 | -.0280 | -.0280 | -.0280 | -.0280 | -.0280 | -.0280 | -.0278 | -.0278 |
| -.075 | -.0398 | -.0404 | -.0406 | -.0410 | -.0414 | -.0416 | -.0418 | -.0420 | -.0420 | -.0420 | -.0420 | -.0420 | -.0418 | -.0416 |
| -.100 | -.0526 | -.0532 | -.0538 | -.0544 | -.0548 | -.0550 | -.0554 | -.0556 | -.0556 | -.0558 | -.0558 | -.0556 | -.0554 | -.0552 |
| -.150 | -.0790 | -.0800 | -.0808 | -.0816 | -.0822 | -.0828 | -.0832 | -.0836 | -.0838 | -.0840 | -.0840 | -.0840 | -.0838 | -.0834 |

| $\frac{\Delta H}{q_o}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3190 | 0.2892 | 0.2532 | 0.2084 | 0.1466 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3096 | .2908 | .2688 | .2434 | .2132 | 0.1754 | 0.1232 | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .2834 | .2712 | .2572 | .2414 | .2232 | .2018 | .1766 | 0.1452 | 0.1020 | ----- | ----- | ----- | ----- |
| .500 | .2474 | .2394 | .2304 | .2202 | .2088 | .1958 | .1808 | .1636 | .1430 | 0.1174 | 0.0824 | ----- | ----- |
| .400 | .2046 | .1996 | .1938 | .1874 | .1802 | .1720 | .1630 | .1528 | .1410 | .1274 | .1114 | 0.0914 | 0.0642 |
| .300 | .1574 | .1544 | .1508 | .1470 | .1426 | .1378 | .1324 | .1264 | .1196 | .1120 | .1034 | .0934 | .0816 |
| .250 | .1326 | .1302 | .1276 | .1248 | .1216 | .1180 | .1140 | .1094 | .1044 | .0988 | .0926 | .0854 | .0770 |
| .200 | .1066 | .1050 | .1032 | .1012 | .0988 | .0962 | .0932 | .0900 | .0864 | .0826 | .0780 | .0730 | .0674 |
| .150 | .0808 | .0796 | .0784 | .0770 | .0754 | .0738 | .0718 | .0696 | .0672 | .0644 | .0614 | .0582 | .0544 |
| .100 | .0540 | .0534 | .0526 | .0518 | .0508 | .0498 | .0486 | .0472 | .0458 | .0442 | .0424 | .0404 | .0382 |
| .075 | .0408 | .0404 | .0398 | .0392 | .0386 | .0378 | .0370 | .0360 | .0350 | .0338 | .0326 | .0312 | .0296 |
| .050 | .0270 | .0268 | .0264 | .0260 | .0256 | .0252 | .0246 | .0240 | .0234 | .0226 | .0218 | .0210 | .0200 |
| .025 | .0136 | .0134 | .0132 | .0130 | .0128 | .0126 | .0124 | .0122 | .0118 | .0114 | .0110 | .0106 | .0102 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0136 | -.0138 | -.0136 | -.0134 | -.0132 | -.0130 | -.0128 | -.0126 | -.0122 | -.0120 | -.0116 | -.0112 | -.0108 |
| -.050 | -.0276 | -.0274 | -.0270 | -.0268 | -.0266 | -.0260 | -.0256 | -.0250 | -.0246 | -.0240 | -.0232 | -.0226 | -.0218 |
| -.075 | -.0414 | -.0410 | -.0406 | -.0402 | -.0398 | -.0392 | -.0386 | -.0378 | -.0370 | -.0362 | -.0352 | -.0342 | -.0330 |
| -.100 | -.0550 | -.0546 | -.0542 | -.0536 | -.0530 | -.0522 | -.0514 | -.0506 | -.0496 | -.0484 | -.0472 | -.0460 | -.0444 |
| -.150 | -.0830 | -.0826 | -.0820 | -.0812 | -.0804 | -.0794 | -.0784 | -.0772 | -.0758 | -.0742 | -.0726 | -.0708 | -.0688 |

TABLE I - Concluded

POINT DRAG COEFFICIENT FOR ISOENERGIC FLOW - Concluded

$$[M_0 = 1.00]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4384 | 0.4398 | 0.4398 | 0.4386 | 0.4358 | 0.4318 | 0.4264 | 0.4194 | 0.4110 | 0.4008 | 0.3886 | 0.3746 | 0.3584 | 0.3396 |
| .700 | .3762 | .3784 | .3794 | .3796 | .3786 | .3766 | .3736 | .3694 | .3640 | .3576 | .3498 | .3406 | .3300 | .3176 |
| .600 | .3170 | .3196 | .3214 | .3222 | .3224 | .3218 | .3202 | .3180 | .3148 | .3108 | .3058 | .2998 | .2930 | .2850 |
| .500 | .2602 | .2628 | .2646 | .2656 | .2668 | .2668 | .2664 | .2654 | .2636 | .2612 | .2582 | .2546 | .2500 | .2452 |
| .400 | .2052 | .2076 | .2094 | .2108 | .2118 | .2124 | .2126 | .2122 | .2134 | .2102 | .2084 | .2064 | .2038 | .2006 |
| .300 | .1520 | .1540 | .1556 | .1570 | .1580 | .1586 | .1590 | .1592 | .1590 | .1584 | .1576 | .1564 | .1550 | .1532 |
| .250 | .1258 | .1274 | .1288 | .1300 | .1310 | .1316 | .1322 | .1324 | .1322 | .1320 | .1314 | .1308 | .1296 | .1284 |
| .200 | .1000 | .1014 | .1026 | .1036 | .1044 | .1050 | .1054 | .1058 | .1058 | .1056 | .1054 | .1050 | .1042 | .1034 |
| .150 | .0742 | .0754 | .0762 | .0770 | .0778 | .0782 | .0786 | .0790 | .0790 | .0790 | .0788 | .0786 | .0782 | .0776 |
| .100 | .0494 | .0502 | .0508 | .0514 | .0518 | .0522 | .0524 | .0526 | .0528 | .0528 | .0528 | .0526 | .0524 | .0522 |
| .075 | .0370 | .0374 | .0380 | .0384 | .0388 | .0390 | .0394 | .0396 | .0396 | .0396 | .0396 | .0396 | .0394 | .0392 |
| .050 | .0246 | .0248 | .0252 | .0256 | .0258 | .0260 | .0262 | .0262 | .0264 | .0264 | .0264 | .0264 | .0262 | .0262 |
| .025 | .0122 | .0124 | .0124 | .0126 | .0128 | .0128 | .0130 | .0130 | .0130 | .0130 | .0130 | .0130 | .0130 | .0130 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0120 | -.0122 | -.0124 | -.0126 | -.0128 | -.0128 | -.0130 | -.0130 | -.0130 | -.0130 | -.0132 | -.0130 | -.0130 | -.0130 |
| -.050 | -.0242 | -.0246 | -.0250 | -.0254 | -.0256 | -.0258 | -.0260 | -.0262 | -.0262 | -.0264 | -.0264 | -.0264 | -.0264 | -.0262 |
| -.075 | -.0364 | -.0370 | -.0376 | -.0380 | -.0384 | -.0388 | -.0390 | -.0394 | -.0396 | -.0396 | -.0398 | -.0398 | -.0398 | -.0396 |
| -.100 | -.0482 | -.0490 | -.0498 | -.0504 | -.0510 | -.0514 | -.0518 | -.0522 | -.0524 | -.0526 | -.0528 | -.0528 | -.0528 | -.0526 |
| -.150 | -.0714 | -.0728 | -.0738 | -.0748 | -.0756 | -.0764 | -.0772 | -.0776 | -.0780 | -.0784 | -.0786 | -.0788 | -.0788 | -.0786 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3176 | 0.2922 | 0.2620 | 0.2250 | 0.1770 | 0.1048 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .3034 | .2872 | .2686 | .2468 | .2210 | .1896 | 0.1492 | 0.0882 | ----- | ----- | ----- | ----- | ----- |
| .600 | .2756 | .2652 | .2530 | .2392 | .2234 | .2052 | .1836 | .1574 | 0.1238 | 0.0730 | ----- | ----- | ----- |
| .500 | .2390 | .2324 | .2246 | .2158 | .2058 | .1944 | .1814 | .1664 | .1488 | .1274 | 0.1002 | 0.0592 | ----- |
| .400 | .1968 | .1926 | .1878 | .1822 | .1760 | .1690 | .1610 | .1520 | .1418 | .1300 | .1162 | .0994 | 0.0780 |
| .300 | .1510 | .1486 | .1456 | .1424 | .1386 | .1344 | .1298 | .1244 | .1186 | .1118 | .1042 | .0954 | .0852 |
| .250 | .1268 | .1250 | .1228 | .1204 | .1176 | .1146 | .1110 | .1070 | .1028 | .0978 | .0924 | .0858 | .0786 |
| .200 | .1022 | .1010 | .0994 | .0978 | .0958 | .0934 | .0910 | .0882 | .0850 | .0814 | .0776 | .0730 | .0680 |
| .150 | .0768 | .0760 | .0750 | .0740 | .0726 | .0710 | .0694 | .0676 | .0654 | .0630 | .0604 | .0574 | .0546 |
| .100 | .0518 | .0512 | .0506 | .0500 | .0492 | .0482 | .0472 | .0462 | .0448 | .0434 | .0418 | .0400 | .0382 |
| .075 | .0388 | .0386 | .0382 | .0376 | .0370 | .0364 | .0358 | .0350 | .0340 | .0330 | .0318 | .0306 | .0292 |
| .050 | .0260 | .0258 | .0254 | .0252 | .0248 | .0244 | .0240 | .0234 | .0228 | .0222 | .0216 | .0208 | .0198 |
| .025 | .0130 | .0128 | .0126 | .0126 | .0124 | .0122 | .0120 | .0118 | .0114 | .0112 | .0108 | .0104 | .0100 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| -.025 | -.0130 | -.0128 | -.0128 | -.0126 | -.0126 | -.0124 | -.0122 | -.0120 | -.0116 | -.0114 | -.0110 | -.0108 | -.0104 |
| -.050 | -.0262 | -.0260 | -.0258 | -.0256 | -.0254 | -.0250 | -.0246 | -.0242 | -.0238 | -.0232 | -.0226 | -.0220 | -.0212 |
| -.075 | -.0394 | -.0392 | -.0390 | -.0386 | -.0382 | -.0378 | -.0372 | -.0366 | -.0360 | -.0352 | -.0344 | -.0334 | -.0324 |
| -.100 | -.0524 | -.0522 | -.0520 | -.0514 | -.0510 | -.0504 | -.0498 | -.0490 | -.0482 | -.0472 | -.0462 | -.0450 | -.0436 |
| -.150 | -.0784 | -.0782 | -.0778 | -.0772 | -.0766 | -.0758 | -.0748 | -.0738 | -.0728 | -.0714 | -.0700 | -.0684 | -.0666 |

NATIONAL ADVISORY
COMMITTEE FOR AERONAUTICS

TABLE II

VALUES OF $2 \left(\frac{P_1}{P_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT FOR FLOWS

WHEREIN ENERGY IS ADDED

$$[M_0 = 0]$$

| $\frac{P_1}{P_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | 0.8944 | 0.7746 | 0.6324 | 0.4472 |
| .700 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | 0.8944 | 0.7746 |
| .600 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 |
| .500 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 |
| .400 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 |
| .300 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 |
| .250 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 |
| .200 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 |
| .150 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 |
| .100 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 |
| .075 | 2.3874 | 2.3452 | 2.3022 | 2.2584 | 2.2136 | 2.1680 | 2.1214 | 2.0736 | 2.0248 | 1.9748 | 1.9236 | 1.8708 | 1.8166 | 1.7606 |
| .050 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 |
| .025 | 2.4290 | 2.3874 | 2.3452 | 2.3022 | 2.2584 | 2.2136 | 2.1680 | 2.1214 | 2.0736 | 2.0248 | 1.9748 | 1.9236 | 1.8708 | 1.8166 |
| 0 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 |
| -.025 | 2.4698 | 2.4290 | 2.3874 | 2.3452 | 2.3022 | 2.2584 | 2.2136 | 2.1680 | 2.1214 | 2.0736 | 2.0248 | 1.9748 | 1.9236 | 1.8708 |
| -.050 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 |
| -.075 | 2.5100 | 2.4698 | 2.4290 | 2.3874 | 2.3452 | 2.3022 | 2.2584 | 2.2136 | 2.1680 | 2.1214 | 2.0736 | 2.0248 | 1.9748 | 1.9236 |
| -.100 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 |
| -.150 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 |
| -.200 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 |
| -.250 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 |
| -.300 | 2.6832 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 |
| -.400 | 2.7568 | 2.7202 | 2.6832 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 |
| -.500 | 2.8284 | 2.7928 | 2.7568 | 2.7202 | 2.6832 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 |
| -.600 | 2.8982 | 2.8636 | 2.8284 | 2.7928 | 2.7568 | 2.7202 | 2.6832 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 | 2.4494 | 2.4084 |
| -.700 | 2.9664 | 2.9326 | 2.8982 | 2.8636 | 2.8284 | 2.7928 | 2.7568 | 2.7202 | 2.6832 | 2.6458 | 2.6076 | 2.5690 | 2.5298 | 2.4900 |
| -.800 | 3.0332 | 3.0000 | 2.9664 | 2.9326 | 2.8982 | 2.8636 | 2.8284 | 2.7928 | 2.7568 | 2.7202 | 2.6832 | 2.6458 | 2.6076 | 2.5690 |

| $\frac{P_1}{P_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0 | 0.6324 | 0.4472 | 0 | 0.6324 | 0.4472 | 0 | 0.6324 | 0.4472 | 0 | 0.6324 | 0.4472 | 0 |
| .700 | 0 | .6324 | .7746 | 0 | .6324 | .7746 | 0 | .6324 | .7746 | 0 | .6324 | .7746 | 0 |
| .600 | 0 | .8944 | 1.0000 | .8944 | .6324 | .7746 | 0 | .8944 | .7746 | .6324 | .8944 | .7746 | .6324 |
| .500 | 0 | 1.0954 | 1.0000 | .8944 | .6324 | .7746 | 0 | .8944 | .7746 | .6324 | .8944 | .7746 | .6324 |
| .400 | 0 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 | .6324 | .8944 | .7746 | .6324 | .8944 | .7746 |
| .300 | 0 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 | .6324 | .8944 | .7746 | .6324 |
| .250 | 0 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 | .6324 | .8944 | .7746 |
| .200 | 0 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 | .6324 | .8944 |
| .150 | 0 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 | .6324 |
| .100 | 0 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 | .7746 |
| .075 | 0 | 1.7030 | 1.6432 | 1.5812 | 1.5166 | 1.4492 | 1.3784 | 1.3038 | 1.2248 | 1.1402 | 1.0488 | .9486 | .8366 |
| .050 | 0 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 | .8944 |
| .025 | 0 | 1.7606 | 1.7030 | 1.6432 | 1.5812 | 1.5166 | 1.4492 | 1.3784 | 1.3038 | 1.2248 | 1.1402 | 1.0488 | .9486 |
| 0 | 0 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 | 1.0000 |
| -.025 | 0 | 1.8166 | 1.7606 | 1.7030 | 1.6432 | 1.5812 | 1.5166 | 1.4492 | 1.3784 | 1.3038 | 1.2248 | 1.1402 | 1.0488 |
| -.050 | 0 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 | 1.0954 |
| -.075 | 0 | 1.8708 | 1.8166 | 1.7606 | 1.7030 | 1.6432 | 1.5812 | 1.5166 | 1.4492 | 1.3784 | 1.3038 | 1.2248 | 1.1402 |
| -.100 | 0 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 | 1.1832 |
| -.150 | 0 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 | 1.2650 |
| -.200 | 0 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 | 1.3416 |
| -.250 | 0 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 | 1.4142 |
| -.300 | 0 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 | 1.5492 | 1.4832 |
| -.400 | 0 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6124 |
| -.500 | 0 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 | 1.7888 | 1.7320 |
| -.600 | 0 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 | 1.8974 | 1.8440 |
| -.700 | 0 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 | 2.0000 | 1.9494 |
| -.800 | 0 | 2.5298 | 2.4900 | 2.4494 | 2.4084 | 2.3664 | 2.3238 | 2.2804 | 2.2360 | 2.1908 | 2.1448 | 2.0976 | 2.0494 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

 $[M_0 = 0.05]$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6730 | 1.6126 | 1.5494 | 1.4834 | 1.4148 | 1.3422 | 1.2656 | 1.1840 | 1.0966 | 1.0012 | 0.8958 | 0.7762 | 0.6344 | 0.4498 |
| .700 | 1.7884 | 1.7316 | 1.6732 | 1.6126 | 1.5496 | 1.4836 | 1.4148 | 1.3422 | 1.2658 | 1.1842 | 1.0966 | 1.0012 | 0.8958 | .7762 |
| .600 | 1.8968 | 1.8436 | 1.7886 | 1.7318 | 1.6732 | 1.6128 | 1.5496 | 1.4836 | 1.4150 | 1.3424 | 1.2658 | 1.1842 | 1.0966 | 1.0012 |
| .500 | 1.9994 | 1.9488 | 1.8970 | 1.8438 | 1.7886 | 1.7320 | 1.6734 | 1.6128 | 1.5498 | 1.4838 | 1.4150 | 1.3424 | 1.2658 | 1.1844 |
| .400 | 2.0970 | 2.0486 | 1.9996 | 1.9490 | 1.8970 | 1.8440 | 1.7888 | 1.7320 | 1.6734 | 1.6130 | 1.5498 | 1.4840 | 1.4150 | 1.3426 |
| .300 | 2.1902 | 2.1440 | 2.0970 | 2.0490 | 1.9996 | 1.9490 | 1.8972 | 1.8440 | 1.7888 | 1.7322 | 1.6736 | 1.6130 | 1.5500 | 1.4842 |
| .250 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 | 1.9488 | 1.8968 | 1.8436 | 1.7884 | 1.7316 | 1.6730 | 1.6124 | 1.5504 |
| .200 | 2.2802 | 2.2352 | 2.1902 | 2.1442 | 2.0972 | 2.0490 | 1.9998 | 1.9492 | 1.8972 | 1.8442 | 1.7890 | 1.7322 | 1.6738 | 1.6132 |
| .150 | 2.3220 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 | 1.9488 | 1.8968 | 1.8436 | 1.7884 | 1.7316 | 1.6730 |
| .100 | 2.3650 | 2.3226 | 2.2794 | 2.2354 | 2.1904 | 2.1442 | 2.0974 | 2.0492 | 1.9998 | 1.9494 | 1.8974 | 1.8442 | 1.7892 | 1.7324 |
| .075 | 2.3860 | 2.3438 | 2.3008 | 2.2574 | 2.2128 | 2.1672 | 2.1206 | 2.0730 | 2.0242 | 1.9742 | 1.9230 | 1.8704 | 1.8162 | 1.7604 |
| .050 | 2.4066 | 2.3650 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 | 1.9488 | 1.8970 | 1.8436 | 1.7884 |
| .025 | 2.4272 | 2.3860 | 2.3438 | 2.3010 | 2.2574 | 2.2126 | 2.1672 | 2.1206 | 2.0730 | 2.0242 | 1.9742 | 1.9230 | 1.8704 | 1.8162 |
| 0 | 2.4480 | 2.4070 | 2.3652 | 2.3228 | 2.2796 | 2.2354 | 2.1906 | 2.1444 | 2.0974 | 2.0494 | 2.0000 | 1.9494 | 1.8978 | 1.8444 |
| -.025 | 2.4682 | 2.4278 | 2.3858 | 2.3438 | 2.3010 | 2.2574 | 2.2128 | 2.1672 | 2.1206 | 2.0730 | 2.0242 | 1.9742 | 1.9230 | 1.8704 |
| -.050 | 2.4884 | 2.4476 | 2.4066 | 2.3652 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 | 1.9488 | 1.8970 |
| -.075 | 2.5082 | 2.4682 | 2.4274 | 2.3860 | 2.3438 | 2.3008 | 2.2574 | 2.2126 | 2.1672 | 2.1206 | 2.0730 | 2.0242 | 1.9742 | 1.9230 |
| -.100 | 2.5282 | 2.4884 | 2.4476 | 2.4066 | 2.3652 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 | 1.9488 |
| -.150 | 2.5674 | 2.5282 | 2.4884 | 2.4476 | 2.4066 | 2.3652 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 | 1.9994 |
| -.200 | 2.6066 | 2.5674 | 2.5282 | 2.4884 | 2.4476 | 2.4066 | 2.3652 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 | 2.0486 |
| -.250 | 2.6440 | 2.6052 | 2.5674 | 2.5282 | 2.4884 | 2.4476 | 2.4066 | 2.3652 | 2.3224 | 2.2792 | 2.2352 | 2.1902 | 2.1440 | 2.0970 |
| -.300 | 2.6814 | 2.6414 | 2.6014 | 2.5614 | 2.5214 | 2.4814 | 2.4414 | 2.4014 | 2.3614 | 2.3214 | 2.2814 | 2.2414 | 2.2014 | 2.1614 |
| -.400 | 2.7548 | 2.7148 | 2.6748 | 2.6348 | 2.5948 | 2.5548 | 2.5148 | 2.4748 | 2.4348 | 2.3948 | 2.3548 | 2.3148 | 2.2748 | 2.2348 |
| -.500 | 2.8264 | 2.7864 | 2.7464 | 2.7064 | 2.6664 | 2.6264 | 2.5864 | 2.5464 | 2.5064 | 2.4664 | 2.4264 | 2.3864 | 2.3464 | 2.3064 |
| -.600 | 2.8960 | 2.8560 | 2.8160 | 2.7760 | 2.7360 | 2.6960 | 2.6560 | 2.6160 | 2.5760 | 2.5360 | 2.4960 | 2.4560 | 2.4160 | 2.3760 |
| -.700 | 2.9638 | 2.9238 | 2.8838 | 2.8438 | 2.8038 | 2.7638 | 2.7238 | 2.6838 | 2.6438 | 2.6038 | 2.5638 | 2.5238 | 2.4838 | 2.4438 |
| -.800 | 3.0300 | 2.9976 | 2.9640 | 2.9304 | 2.8962 | 2.8618 | 2.8268 | 2.7916 | 2.7554 | 2.7192 | 2.6822 | 2.6450 | 2.6070 | 2.5684 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 0.6344 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .8960 | .7764 | 0.6346 | 0.4498 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.0968 | 1.0014 | .8960 | .7764 | .6346 | 0 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.2660 | 1.1844 | 1.0968 | 1.0014 | .8960 | .7764 | 0.6346 | 0.4500 | 0 | ----- | ----- | ----- | ----- |
| .300 | 1.4152 | 1.3426 | 1.2660 | 1.1844 | 1.0968 | 1.0014 | .8960 | .7764 | .6346 | .4500 | 0 | ----- | ----- |
| .250 | 1.4836 | 1.4146 | 1.3420 | 1.2654 | 1.1838 | 1.0962 | 1.0008 | .8956 | .7760 | .6342 | .4500 | ----- | ----- |
| .200 | 1.5500 | 1.4842 | 1.4152 | 1.3426 | 1.2662 | 1.1846 | 1.0970 | 1.0016 | .8962 | .7766 | .6346 | .4500 | ----- |
| .150 | 1.6124 | 1.5494 | 1.4826 | 1.4146 | 1.3420 | 1.2654 | 1.1838 | 1.0962 | 1.0008 | .8956 | .7760 | .6342 | 0.4496 |
| .100 | 1.6738 | 1.6132 | 1.5502 | 1.4844 | 1.4154 | 1.3428 | 1.2662 | 1.1846 | 1.0970 | 1.0016 | .8962 | .7766 | .6348 |
| .075 | 1.7026 | 1.6430 | 1.5812 | 1.5168 | 1.4492 | 1.3788 | 1.3042 | 1.2252 | 1.1444 | 1.0496 | .9498 | .8376 | .7086 |
| .050 | 1.7316 | 1.6730 | 1.6124 | 1.5494 | 1.4834 | 1.4146 | 1.3420 | 1.2654 | 1.1870 | 1.0960 | 1.0008 | .8954 | .7760 |
| .025 | 1.7604 | 1.7026 | 1.6430 | 1.5812 | 1.5166 | 1.4494 | 1.3786 | 1.3042 | 1.2254 | 1.1406 | 1.0496 | .9498 | .8378 |
| 0 | 1.7892 | 1.7324 | 1.6740 | 1.6134 | 1.5502 | 1.4844 | 1.4154 | 1.3408 | 1.2662 | 1.1846 | 1.0970 | 1.0006 | .8962 |
| -.025 | 1.8162 | 1.7604 | 1.7026 | 1.6430 | 1.5812 | 1.5168 | 1.4494 | 1.3786 | 1.3042 | 1.2252 | 1.1406 | 1.0494 | .9498 |
| -.050 | 1.8436 | 1.7884 | 1.7316 | 1.6730 | 1.6124 | 1.5494 | 1.4834 | 1.4146 | 1.3420 | 1.2654 | 1.1836 | 1.0960 | 1.0008 |
| -.075 | 1.8704 | 1.8162 | 1.7604 | 1.7026 | 1.6428 | 1.5812 | 1.5166 | 1.4494 | 1.3788 | 1.3042 | 1.2252 | 1.1408 | 1.0494 |
| -.100 | 1.8976 | 1.8444 | 1.7894 | 1.7326 | 1.6740 | 1.6134 | 1.5502 | 1.4844 | 1.4156 | 1.3420 | 1.2654 | 1.1836 | 1.0972 |
| -.150 | 1.9486 | 1.8968 | 1.8436 | 1.7884 | 1.7316 | 1.6728 | 1.6124 | 1.5490 | 1.4836 | 1.4146 | 1.3420 | 1.2654 | 1.1836 |
| -.200 | 2.0002 | 1.9498 | 1.8980 | 1.8446 | 1.7894 | 1.7328 | 1.6742 | 1.6136 | 1.5504 | 1.4844 | 1.4156 | 1.3430 | 1.2664 |
| -.250 | 2.0486 | 1.9994 | 1.9488 | 1.8968 | 1.8436 | 1.7894 | 1.7316 | 1.6730 | 1.6124 | 1.5494 | 1.4846 | 1.4146 | 1.3448 |
| -.300 | 2.0978 | 2.0498 | 2.0004 | 1.9498 | 1.8978 | 1.8448 | 1.7896 | 1.7328 | 1.6742 | 1.6136 | 1.5504 | 1.4848 | 1.4158 |
| -.400 | 2.1910 | 2.1450 | 2.0980 | 2.0498 | 2.0006 | 1.9500 | 1.8982 | 1.8448 | 1.7896 | 1.7330 | 1.6744 | 1.6138 | 1.5506 |
| -.500 | 2.2802 | 2.2362 | 2.1912 | 2.1450 | 2.0982 | 2.0500 | 2.0006 | 1.9500 | 1.8982 | 1.8450 | 1.7898 | 1.7330 | 1.6744 |
| -.600 | 2.3662 | 2.3238 | 2.2804 | 2.2362 | 2.1914 | 2.1452 | 2.0982 | 2.0500 | 2.0008 | 1.9502 | 1.8982 | 1.8450 | 1.7898 |
| -.700 | 2.4494 | 2.4080 | 2.3662 | 2.3240 | 2.2806 | 2.2364 | 2.1916 | 2.1454 | 2.0984 | 2.0502 | 2.0010 | 1.9502 | 1.8984 |
| -.800 | 2.5294 | 2.4896 | 2.4494 | 2.4082 | 2.3664 | 2.3240 | 2.2808 | 2.2366 | 2.1916 | 2.1454 | 2.0986 | 2.0504 | 2.0010 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$\left[M_o = 0.10 \right]$$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6728 | 1.6126 | 1.5498 | 1.4842 | 1.4158 | 1.3438 | 1.2676 | 1.1866 | 1.0992 | 1.0046 | 0.8998 | 0.7808 | 0.6406 | 0.4584 | 0.2512 |
| .700 | 1.7876 | 1.7314 | 1.6732 | 1.6130 | 1.5502 | 1.4846 | 1.4160 | 1.3410 | 1.2678 | 1.1868 | 1.0994 | 1.0050 | 0.9000 | 0.7812 | 0.6552 |
| .600 | 1.8954 | 1.8426 | 1.7880 | 1.7318 | 1.6736 | 1.6134 | 1.5506 | 1.4850 | 1.4164 | 1.3414 | 1.2682 | 1.1872 | 1.0936 | 1.0052 | 0.9052 |
| .500 | 1.9976 | 1.9474 | 1.8960 | 1.8430 | 1.7884 | 1.7324 | 1.6740 | 1.6138 | 1.5510 | 1.4854 | 1.4168 | 1.3448 | 1.2686 | 1.1874 | 1.0952 |
| .400 | 2.0946 | 2.0468 | 1.9980 | 1.9478 | 1.8964 | 1.8434 | 1.7890 | 1.7328 | 1.6744 | 1.6142 | 1.5514 | 1.4858 | 1.4172 | 1.3452 | 1.2552 |
| .300 | 2.1870 | 2.1416 | 2.0952 | 2.0474 | 1.9986 | 1.9484 | 1.8968 | 1.8438 | 1.7894 | 1.7332 | 1.6748 | 1.6146 | 1.5518 | 1.4862 | 1.4152 |
| .250 | 2.2320 | 2.1874 | 2.1418 | 2.0954 | 2.0476 | 1.9988 | 1.9486 | 1.8970 | 1.8442 | 1.7896 | 1.7334 | 1.6750 | 1.6148 | 1.5518 | 1.4862 |
| .200 | 2.2760 | 2.2322 | 2.1876 | 2.1422 | 2.0956 | 2.0480 | 1.9990 | 1.9488 | 1.8974 | 1.8444 | 1.7898 | 1.7336 | 1.6752 | 1.6150 | 1.5518 |
| .150 | 2.3188 | 2.2762 | 2.2326 | 2.1880 | 2.1424 | 2.0958 | 2.0482 | 1.9992 | 1.9492 | 1.8976 | 1.8446 | 1.7900 | 1.7338 | 1.6754 | 1.6154 |
| .100 | 2.3614 | 2.3194 | 2.2766 | 2.2328 | 2.1882 | 2.1426 | 2.0962 | 2.0486 | 1.9996 | 1.9494 | 1.8978 | 1.8448 | 1.7902 | 1.7340 | 1.6756 |
| .075 | 2.3822 | 2.3406 | 2.2980 | 2.2550 | 2.2108 | 2.1656 | 2.1198 | 2.0724 | 2.0240 | 1.9748 | 1.9240 | 1.8716 | 1.8178 | 1.7626 | 1.7062 |
| .050 | 2.4028 | 2.3618 | 2.3196 | 2.2770 | 2.2332 | 2.1884 | 2.1430 | 2.0964 | 2.0486 | 1.9998 | 1.9496 | 1.8974 | 1.8450 | 1.7906 | 1.7342 |
| .025 | 2.4234 | 2.3826 | 2.3408 | 2.2984 | 2.2544 | 2.2110 | 2.1660 | 2.1200 | 2.0726 | 2.0244 | 1.9750 | 1.9242 | 1.8718 | 1.8182 | 1.7626 |
| 0 | 2.4438 | 2.4032 | 2.3620 | 2.3200 | 2.2770 | 2.2334 | 2.1888 | 2.1432 | 2.0966 | 2.0490 | 2.0000 | 1.9498 | 1.8982 | 1.8454 | 1.7906 |
| -.025 | 2.4640 | 2.4238 | 2.3828 | 2.3416 | 2.2986 | 2.2556 | 2.2112 | 2.1662 | 2.1202 | 2.0730 | 2.0246 | 1.9752 | 1.9244 | 1.8722 | 1.8186 |
| -.050 | 2.4848 | 2.4440 | 2.4036 | 2.3626 | 2.3202 | 2.2774 | 2.2336 | 2.1890 | 2.1434 | 2.0970 | 2.0492 | 2.0000 | 1.9500 | 1.8986 | 1.8458 |
| -.075 | 2.5036 | 2.4644 | 2.4242 | 2.3836 | 2.3414 | 2.2990 | 2.2560 | 2.2116 | 2.1664 | 2.1206 | 2.0732 | 2.0248 | 1.9754 | 1.9248 | 1.8726 |
| -.100 | 2.5236 | 2.4844 | 2.4446 | 2.4038 | 2.3626 | 2.3206 | 2.2776 | 2.2340 | 2.1892 | 2.1438 | 2.0972 | 2.0494 | 2.0006 | 1.9504 | 1.8986 |
| -.150 | 2.5622 | 2.5238 | 2.4848 | 2.4448 | 2.4042 | 2.3630 | 2.3208 | 2.2780 | 2.2342 | 2.1896 | 2.1440 | 2.0974 | 2.0498 | 2.0008 | 1.9506 |
| -.200 | 2.6008 | 2.5630 | 2.5242 | 2.4850 | 2.4452 | 2.4046 | 2.3632 | 2.3212 | 2.2782 | 2.2346 | 2.1898 | 2.1442 | 2.0978 | 2.0500 | 1.9508 |
| -.250 | 2.6384 | 2.6012 | 2.5632 | 2.5248 | 2.4854 | 2.4454 | 2.4048 | 2.3636 | 2.3214 | 2.2786 | 2.2348 | 2.1900 | 2.1446 | 2.0980 | 1.9508 |
| -.300 | 2.6758 | 2.6388 | 2.6014 | 2.5636 | 2.5250 | 2.4856 | 2.4458 | 2.4050 | 2.3638 | 2.3218 | 2.2788 | 2.2350 | 2.1904 | 2.1448 | 1.9508 |
| -.400 | 2.7486 | 2.7128 | 2.6766 | 2.6394 | 2.6022 | 2.5642 | 2.5256 | 2.4862 | 2.4464 | 2.4058 | 2.3646 | 2.3222 | 2.2794 | 2.2356 | 1.9508 |
| -.500 | 2.8194 | 2.7846 | 2.7492 | 2.7134 | 2.6772 | 2.6402 | 2.6028 | 2.5648 | 2.5262 | 2.4870 | 2.4470 | 2.4062 | 2.3650 | 2.3230 | 1.9508 |
| -.600 | 2.8888 | 2.8548 | 2.8202 | 2.7854 | 2.7502 | 2.7142 | 2.6778 | 2.6408 | 2.6036 | 2.5664 | 2.5288 | 2.4914 | 2.4536 | 2.4154 | 1.9508 |
| -.700 | 2.9564 | 2.9232 | 2.8896 | 2.8554 | 2.8208 | 2.7860 | 2.7508 | 2.7146 | 2.6786 | 2.6414 | 2.6042 | 2.5668 | 2.5294 | 2.4916 | 1.9508 |
| -.800 | 3.0222 | 2.9900 | 2.9570 | 2.9240 | 2.8902 | 2.8562 | 2.8216 | 2.7868 | 2.7516 | 2.7154 | 2.6792 | 2.6420 | 2.6048 | 2.5676 | 1.9508 |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.1000 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 0.6408 | 0.4584 | 0.1000 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 0.9002 | 0.7812 | 0.6408 | 0.4586 | 0.1002 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1000 | 1.0054 | 0.9004 | 0.7816 | 0.6410 | 0.4588 | 0.1002 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.2688 | 1.1878 | 1.1002 | 1.0058 | 0.9006 | 0.7818 | 0.6412 | 0.4588 | 0.1002 | ----- | ----- | ----- | ----- | ----- |
| .300 | 1.4176 | 1.3454 | 1.2692 | 1.1880 | 1.1004 | 1.0060 | 0.9010 | 0.7818 | 0.6414 | 0.4590 | 0.1002 | ----- | ----- | ----- |
| .250 | 1.4864 | 1.4176 | 1.3456 | 1.2694 | 1.1882 | 1.1008 | 1.0062 | 0.9010 | 0.7820 | 0.6414 | 0.4590 | 0.1002 | ----- | ----- |
| .200 | 1.5522 | 1.4864 | 1.4178 | 1.3458 | 1.2694 | 1.1884 | 1.1008 | 1.0062 | 0.9012 | 0.7820 | 0.6416 | 0.4590 | 0.1002 | ----- |
| .150 | 1.6152 | 1.5522 | 1.4868 | 1.4180 | 1.3460 | 1.2696 | 1.1886 | 1.1010 | 1.0064 | 0.9012 | 0.7822 | 0.6416 | 0.4592 | 0.1002 |
| .100 | 1.6756 | 1.6154 | 1.5526 | 1.4870 | 1.4182 | 1.3460 | 1.2698 | 1.1888 | 1.1010 | 1.0064 | 0.9014 | 0.7822 | 0.6416 | 0.4592 |
| .075 | 1.7052 | 1.6458 | 1.5842 | 1.5202 | 1.4530 | 1.3828 | 1.3086 | 1.2302 | 1.1458 | 1.0548 | 0.9554 | 0.8440 | 0.7156 | 0.5840 |
| .050 | 1.7342 | 1.6758 | 1.6156 | 1.5526 | 1.4870 | 1.4184 | 1.3462 | 1.2700 | 1.1888 | 1.1014 | 1.0066 | 0.9016 | 0.7824 | 0.6416 |
| .025 | 1.7626 | 1.7054 | 1.6460 | 1.5844 | 1.5204 | 1.4532 | 1.3830 | 1.3088 | 1.2302 | 1.1458 | 1.0550 | 0.9556 | 0.8440 | 0.7156 |
| 0 | 1.7906 | 1.7344 | 1.6760 | 1.6158 | 1.5530 | 1.4872 | 1.4186 | 1.3464 | 1.2702 | 1.1888 | 1.1014 | 1.0068 | 0.9016 | 0.7824 |
| -.025 | 1.8184 | 1.7628 | 1.7056 | 1.6462 | 1.5846 | 1.5204 | 1.4534 | 1.3832 | 1.3090 | 1.2304 | 1.1460 | 1.0552 | 0.9558 | 0.8440 |
| -.050 | 1.8456 | 1.7908 | 1.7348 | 1.6764 | 1.6160 | 1.5534 | 1.4874 | 1.4188 | 1.3466 | 1.2702 | 1.1890 | 1.1016 | 1.0068 | 0.9016 |
| -.075 | 1.8724 | 1.8184 | 1.7632 | 1.7060 | 1.6464 | 1.5848 | 1.5206 | 1.4536 | 1.3832 | 1.3090 | 1.2306 | 1.1462 | 1.0554 | 0.9016 |
| -.100 | 1.8988 | 1.8458 | 1.7912 | 1.7350 | 1.6764 | 1.6162 | 1.5534 | 1.4876 | 1.4190 | 1.3468 | 1.2704 | 1.1892 | 1.1016 | 0.9016 |
| -.150 | 1.9506 | 1.8990 | 1.8460 | 1.7914 | 1.7352 | 1.6766 | 1.6164 | 1.5534 | 1.4878 | 1.4190 | 1.3470 | 1.2706 | 1.1894 | 0.9016 |
| -.200 | 2.0010 | 1.9508 | 1.8992 | 1.8462 | 1.7916 | 1.7354 | 1.6768 | 1.6166 | 1.5538 | 1.4880 | 1.4192 | 1.3472 | 1.2708 | 0.9016 |
| -.250 | 2.0502 | 2.0012 | 1.9510 | 1.8996 | 1.8464 | 1.7918 | 1.7356 | 1.6772 | 1.6168 | 1.5536 | 1.4882 | 1.4194 | 1.3472 | 0.9016 |
| -.300 | 2.0982 | 2.0504 | 2.0016 | 1.9514 | 1.8996 | 1.8466 | 1.7920 | 1.7358 | 1.6774 | 1.6170 | 1.5542 | 1.4884 | 1.4196 | 0.9016 |
| -.400 | 2.1908 | 2.1452 | 2.0988 | 2.0510 | 2.0020 | 1.9518 | 1.9002 | 1.8472 | 1.7924 | 1.7362 | 1.6778 | 1.6174 | 1.5546 | 0.9016 |
| -.500 | 2.2800 | 2.2362 | 2.1914 | 2.1460 | 2.0992 | 2.0514 | 2.0026 | 1.9524 | 1.9006 | 1.8476 | 1.7930 | 1.7366 | 1.6782 | 0.9016 |
| -.600 | 2.3656 | 2.3234 | 2.2806 | 2.2368 | 2.1920 | 2.1464 | 2.0998 | 2.0526 | 2.0030 | 1.9528 | 1.9012 | 1.8482 | 1.7934 | 0.9016 |
| -.700 | 2.4482 | 2.4074 | 2.3662 | 2.3240 | 2.2810 | 2.2372 | 2.1926 | 2.1470 | 2.1004 | 2.0524 | 2.0036 | 1.9534 | 1.9016 | 0.9016 |
| -.800 | 2.5280 | 2.4886 | 2.4488 | 2.4082 | 2.3668 | 2.3246 | 2.2816 | 2.2380 | 2.1930 | 2.1474 | 2.1008 | 2.0530 | 2.0040 | 0.9016 |

TABLE II - Continued

$$\text{VALUES OF } 2 \left(\frac{\rho_1}{\rho_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.15]$$

| $\frac{\Delta h}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6720 | 1.6124 | 1.5504 | 1.4854 | 1.4178 | 1.3466 | 1.2710 | 1.1904 | 1.1042 | 1.0102 | 0.9064 | 0.7888 | 0.6504 | 0.4720 |
| .700 | 1.7860 | 1.7304 | 1.6730 | 1.6132 | 1.5512 | 1.4864 | 1.4186 | 1.3474 | 1.2716 | 1.1910 | 1.1048 | 1.0110 | 0.9070 | 0.7894 |
| .600 | 1.8930 | 1.8410 | 1.7870 | 1.7314 | 1.6738 | 1.6142 | 1.5520 | 1.4872 | 1.4194 | 1.3480 | 1.2724 | 1.1918 | 1.1054 | 1.0116 |
| .500 | 1.9944 | 1.9450 | 1.8942 | 1.8420 | 1.7880 | 1.7324 | 1.6748 | 1.6152 | 1.5528 | 1.4880 | 1.4202 | 1.3488 | 1.2732 | 1.1924 |
| .400 | 2.0906 | 2.0436 | 1.9956 | 1.9460 | 1.8952 | 1.8430 | 1.7890 | 1.7334 | 1.6756 | 1.6160 | 1.5538 | 1.4888 | 1.4210 | 1.3496 |
| .300 | 2.1824 | 2.1376 | 2.0918 | 2.0448 | 1.9966 | 1.9470 | 1.8964 | 1.8442 | 1.7900 | 1.7342 | 1.6766 | 1.6168 | 1.5548 | 1.4898 |
| .250 | 2.2270 | 2.1832 | 2.1382 | 2.0922 | 2.0454 | 1.9970 | 1.9476 | 1.8968 | 1.8444 | 1.7904 | 1.7350 | 1.6772 | 1.6176 | 1.5552 |
| .200 | 2.2704 | 2.2276 | 2.1838 | 2.1388 | 2.0928 | 2.0460 | 1.9978 | 1.9482 | 1.8972 | 1.8450 | 1.7910 | 1.7354 | 1.6776 | 1.6178 |
| .150 | 2.3132 | 2.2712 | 2.2282 | 2.1842 | 2.1394 | 2.0934 | 2.0466 | 1.9982 | 1.9486 | 1.8978 | 1.8456 | 1.7916 | 1.7360 | 1.6782 |
| .100 | 2.3554 | 2.3140 | 2.2718 | 2.2288 | 2.1848 | 2.1400 | 2.0940 | 2.0472 | 1.9998 | 1.9494 | 1.8984 | 1.8462 | 1.7920 | 1.7364 |
| .075 | 2.3760 | 2.3352 | 2.2934 | 2.2506 | 2.2072 | 2.1630 | 2.1176 | 2.0712 | 2.0232 | 1.9746 | 1.9244 | 1.8726 | 1.8196 | 1.7648 |
| .050 | 2.3964 | 2.3558 | 2.3146 | 2.2722 | 2.2294 | 2.1856 | 2.1406 | 2.0948 | 2.0476 | 1.9992 | 1.9500 | 1.8990 | 1.8468 | 1.7926 |
| .025 | 2.4168 | 2.3766 | 2.3358 | 2.2938 | 2.2514 | 2.2080 | 2.1636 | 2.1184 | 2.0716 | 2.0240 | 1.9752 | 1.9250 | 1.8734 | 1.8202 |
| 0 | 2.4370 | 2.3972 | 2.3568 | 2.3152 | 2.2730 | 2.2300 | 2.1862 | 2.1412 | 2.0952 | 2.0482 | 2.0000 | 1.9504 | 1.8996 | 1.8472 |
| -.025 | 2.4570 | 2.4176 | 2.3774 | 2.3364 | 2.2944 | 2.2520 | 2.2086 | 2.1642 | 2.1186 | 2.0722 | 2.0246 | 1.9758 | 1.9256 | 1.8738 |
| -.050 | 2.4768 | 2.4374 | 2.3980 | 2.3570 | 2.3158 | 2.2736 | 2.2308 | 2.1868 | 2.1418 | 2.0958 | 2.0488 | 2.0006 | 1.9512 | 1.9002 |
| -.075 | 2.4964 | 2.4576 | 2.4182 | 2.3778 | 2.3370 | 2.2952 | 2.2528 | 2.2092 | 2.1648 | 2.1192 | 2.0728 | 2.0252 | 1.9764 | 1.9262 |
| -.100 | 2.5158 | 2.4774 | 2.4384 | 2.3984 | 2.3580 | 2.3166 | 2.2742 | 2.2314 | 2.1872 | 2.1424 | 2.0964 | 2.0494 | 1.9912 | 1.9516 |
| -.150 | 2.5546 | 2.5166 | 2.4784 | 2.4390 | 2.3992 | 2.3586 | 2.3172 | 2.2752 | 2.2318 | 2.1860 | 2.1400 | 2.0930 | 2.0500 | 2.0018 |
| -.200 | 2.5924 | 2.5552 | 2.5172 | 2.4786 | 2.4396 | 2.3998 | 2.3594 | 2.3180 | 2.2756 | 2.2326 | 2.1866 | 2.1406 | 2.0976 | 2.0506 |
| -.250 | 2.6296 | 2.5932 | 2.5560 | 2.5180 | 2.4794 | 2.4404 | 2.4006 | 2.3600 | 2.3184 | 2.2764 | 2.2332 | 2.1892 | 2.1442 | 2.0982 |
| -.300 | 2.6666 | 2.6304 | 2.5938 | 2.5564 | 2.5186 | 2.4802 | 2.4412 | 2.4012 | 2.3606 | 2.3192 | 2.2768 | 2.2338 | 2.1900 | 2.1450 |
| -.400 | 2.7388 | 2.7036 | 2.6682 | 2.6318 | 2.5952 | 2.5580 | 2.5200 | 2.4816 | 2.4424 | 2.4024 | 2.3620 | 2.3204 | 2.2782 | 2.2352 |
| -.500 | 2.8088 | 2.7748 | 2.7404 | 2.7050 | 2.6694 | 2.6334 | 2.5968 | 2.5596 | 2.5212 | 2.4828 | 2.4438 | 2.4040 | 2.3634 | 2.3218 |
| -.600 | 2.8772 | 2.8438 | 2.8104 | 2.7762 | 2.7418 | 2.7066 | 2.6710 | 2.6348 | 2.5980 | 2.5608 | 2.5228 | 2.4844 | 2.4452 | 2.4054 |
| -.700 | 2.9438 | 2.9118 | 2.8788 | 2.8452 | 2.8118 | 2.7780 | 2.7434 | 2.7082 | 2.6724 | 2.6362 | 2.5996 | 2.5624 | 2.5244 | 2.4858 |
| -.800 | 3.0088 | 2.9776 | 2.9456 | 2.9132 | 2.8802 | 2.8470 | 2.8136 | 2.7796 | 2.7448 | 2.7096 | 2.6740 | 2.6374 | 2.6012 | 2.5640 |

| $\frac{\Delta h}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|---------|--------|---------|--------|---------|--------|---------|--------|---------|--------|--------|--------|
| 0.800 | 0.1498 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .6508 | 0.14722 | 0.1498 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .9074 | .7898 | .6512 | 0.14726 | 0.1500 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1060 | 1.0120 | .9080 | .7902 | .6514 | 0.14728 | 0.1500 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.2738 | 1.1930 | 1.1066 | 1.0126 | .9084 | .7906 | .6518 | 0.14730 | 0.1502 | ----- | ----- | ----- | ----- |
| .300 | 1.4218 | 1.3502 | 1.2746 | 1.1938 | 1.1074 | 1.0132 | .9090 | .7910 | .6522 | 0.14732 | 0.1502 | ----- | ----- |
| .250 | 1.4900 | 1.4222 | 1.3506 | 1.2750 | 1.1942 | 1.1076 | 1.0134 | .9092 | .7912 | .6524 | .4734 | 0.1502 | ----- |
| .200 | 1.5556 | 1.4904 | 1.4226 | 1.3510 | 1.2754 | 1.1944 | 1.1078 | 1.0138 | .9094 | .7914 | .6526 | .4736 | 0.1502 |
| .150 | 1.6182 | 1.5560 | 1.4910 | 1.4230 | 1.3516 | 1.2756 | 1.1948 | 1.1082 | 1.0140 | .9096 | .7916 | .6528 | .4738 |
| .100 | 1.6784 | 1.6186 | 1.5564 | 1.4914 | 1.4234 | 1.3518 | 1.2760 | 1.1950 | 1.1086 | 1.0142 | .9100 | .7920 | .6530 |
| .075 | 1.7080 | 1.6494 | 1.5880 | 1.5246 | 1.4582 | 1.3880 | 1.3144 | 1.2364 | 1.1530 | 1.0624 | .9636 | .8534 | .7256 |
| .050 | 1.7370 | 1.6792 | 1.6194 | 1.5572 | 1.4918 | 1.4238 | 1.3522 | 1.2764 | 1.1954 | 1.1088 | 1.0146 | .9102 | .7922 |
| .025 | 1.7652 | 1.7086 | 1.6498 | 1.5888 | 1.5250 | 1.4584 | 1.3884 | 1.3148 | 1.2368 | 1.1532 | 1.0628 | .9638 | .8536 |
| 0 | 1.7930 | 1.7372 | 1.6794 | 1.6196 | 1.5574 | 1.4922 | 1.4242 | 1.3526 | 1.2768 | 1.1956 | 1.1092 | 1.0148 | .9104 |
| -.025 | 1.8206 | 1.7656 | 1.7092 | 1.6502 | 1.5890 | 1.5254 | 1.4588 | 1.3888 | 1.3152 | 1.2370 | 1.1534 | 1.0630 | .9642 |
| -.050 | 1.8476 | 1.7936 | 1.7380 | 1.6800 | 1.6202 | 1.5576 | 1.4926 | 1.4246 | 1.3530 | 1.2770 | 1.1960 | 1.1094 | 1.0152 |
| -.075 | 1.8742 | 1.8212 | 1.7662 | 1.7096 | 1.6508 | 1.5894 | 1.5258 | 1.4594 | 1.3894 | 1.3156 | 1.2374 | 1.1538 | 1.0634 |
| -.100 | 1.9004 | 1.8482 | 1.7940 | 1.7382 | 1.6802 | 1.6204 | 1.5582 | 1.4930 | 1.4250 | 1.3532 | 1.2776 | 1.1964 | 1.1098 |
| -.150 | 1.9522 | 1.9010 | 1.8488 | 1.7946 | 1.7390 | 1.6810 | 1.6212 | 1.5586 | 1.4934 | 1.4254 | 1.3536 | 1.2778 | 1.1968 |
| -.200 | 2.0022 | 1.9526 | 1.9016 | 1.8492 | 1.7952 | 1.7392 | 1.6812 | 1.6214 | 1.5590 | 1.4938 | 1.4258 | 1.3540 | 1.2782 |
| -.250 | 2.0510 | 2.0028 | 1.9534 | 1.9022 | 1.8498 | 1.7954 | 1.7398 | 1.6820 | 1.6220 | 1.5594 | 1.4942 | 1.4262 | 1.3544 |
| -.300 | 2.0988 | 2.0516 | 2.0034 | 1.9536 | 1.9028 | 1.8502 | 1.7960 | 1.7402 | 1.6824 | 1.6222 | 1.5598 | 1.4946 | 1.4266 |
| -.400 | 2.1910 | 2.1460 | 2.1000 | 2.0528 | 2.0046 | 1.9548 | 1.9038 | 1.8514 | 1.7970 | 1.7410 | 1.6832 | 1.6232 | 1.5608 |
| -.500 | 2.2794 | 2.2364 | 2.1922 | 2.1472 | 2.1012 | 2.0540 | 2.0056 | 1.9558 | 1.9048 | 1.8522 | 1.7980 | 1.7420 | 1.6812 |
| -.600 | 2.3646 | 2.3230 | 2.2806 | 2.2376 | 2.1936 | 2.1484 | 2.1022 | 2.0552 | 2.0068 | 1.9568 | 1.9058 | 1.8534 | 1.7990 |
| -.700 | 2.4464 | 2.4066 | 2.3660 | 2.3244 | 2.2820 | 2.2388 | 2.1948 | 2.1496 | 2.1036 | 2.0562 | 2.0078 | 1.9580 | 1.9070 |
| -.800 | 2.5256 | 2.4870 | 2.4480 | 2.4080 | 2.3674 | 2.3256 | 2.2832 | 2.2402 | 2.1960 | 2.1508 | 2.1046 | 2.0574 | 2.0090 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

 $[M_o = 0.20]$

| $\frac{\Delta H}{q_o}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6708 | 1.6122 | 1.5512 | 1.4874 | 1.4212 | 1.3500 | 1.2756 | 1.1960 | 1.1108 | 1.0180 | 0.9156 | 0.7998 | 0.6636 | 0.4906 | 0.4906 |
| .700 | 1.7838 | 1.7290 | 1.6724 | 1.6140 | 1.5528 | 1.4888 | 1.4226 | 1.3514 | 1.2770 | 1.1972 | 1.1120 | 1.0192 | 0.9168 | 0.8006 | 0.8006 |
| .600 | 1.8896 | 1.8384 | 1.7856 | 1.7310 | 1.6742 | 1.6156 | 1.5542 | 1.4904 | 1.4234 | 1.3528 | 1.2782 | 1.1984 | 1.1132 | 1.0202 | 1.0202 |
| .500 | 1.9898 | 1.9414 | 1.8916 | 1.8404 | 1.7874 | 1.7326 | 1.6758 | 1.6172 | 1.5558 | 1.4918 | 1.4248 | 1.3540 | 1.2794 | 1.1996 | 1.1996 |
| .400 | 2.0848 | 2.0390 | 1.9920 | 1.9434 | 1.8934 | 1.8422 | 1.7892 | 1.7344 | 1.6770 | 1.6188 | 1.5574 | 1.4934 | 1.4262 | 1.3554 | 1.3554 |
| .300 | 2.1758 | 2.1320 | 2.0872 | 2.0412 | 1.9940 | 1.9454 | 1.8954 | 1.8440 | 1.7910 | 1.7362 | 1.6792 | 1.6204 | 1.5590 | 1.4948 | 1.4948 |
| .250 | 2.2196 | 2.1770 | 2.1330 | 2.0882 | 2.0422 | 1.9950 | 1.9462 | 1.8964 | 1.8450 | 1.7920 | 1.7370 | 1.6800 | 1.6212 | 1.5598 | 1.5598 |
| .200 | 2.2628 | 2.2208 | 2.1780 | 2.1340 | 2.0892 | 2.0432 | 1.9960 | 1.9472 | 1.8974 | 1.8458 | 1.7928 | 1.7378 | 1.6810 | 1.6220 | 1.6220 |
| .150 | 2.3050 | 2.2640 | 2.2220 | 2.1792 | 2.1352 | 2.0904 | 2.0444 | 1.9970 | 1.9482 | 1.8982 | 1.8468 | 1.7936 | 1.7390 | 1.6820 | 1.6820 |
| .100 | 2.3464 | 2.3062 | 2.2650 | 2.2232 | 2.1802 | 2.1362 | 2.0914 | 2.0454 | 1.9980 | 1.9494 | 1.8994 | 1.8478 | 1.7946 | 1.7396 | 1.7396 |
| .075 | 2.3668 | 2.3270 | 2.2864 | 2.2448 | 2.2010 | 2.1560 | 2.1114 | 2.0690 | 2.0224 | 1.9744 | 1.9250 | 1.8742 | 1.8220 | 1.7678 | 1.7678 |
| .050 | 2.3870 | 2.3476 | 2.3074 | 2.2662 | 2.2242 | 2.1814 | 2.1374 | 2.0924 | 2.0464 | 1.9990 | 1.9504 | 1.9002 | 1.8488 | 1.7954 | 1.7954 |
| .025 | 2.4070 | 2.3680 | 2.3282 | 2.2876 | 2.2460 | 2.2030 | 2.1600 | 2.1156 | 2.0702 | 2.0234 | 1.9754 | 1.9260 | 1.8752 | 1.8230 | 1.8230 |
| 0 | 2.4270 | 2.3884 | 2.3490 | 2.3082 | 2.2674 | 2.2254 | 2.1824 | 2.1384 | 2.0936 | 2.0474 | 2.0000 | 1.9514 | 1.9012 | 1.8496 | 1.8496 |
| -.025 | 2.4468 | 2.4082 | 2.3692 | 2.3294 | 2.2886 | 2.2472 | 2.2046 | 2.1612 | 2.1166 | 2.0712 | 2.0244 | 1.9764 | 1.9270 | 1.8760 | 1.8760 |
| -.050 | 2.4662 | 2.4284 | 2.3896 | 2.3502 | 2.3096 | 2.2686 | 2.2266 | 2.1836 | 2.1394 | 2.0948 | 2.0484 | 1.9994 | 1.9494 | 1.8984 | 1.8984 |
| -.075 | 2.4856 | 2.4480 | 2.4094 | 2.3704 | 2.3308 | 2.2898 | 2.2482 | 2.2056 | 2.1622 | 2.1178 | 2.0722 | 2.0252 | 1.9772 | 1.9278 | 1.9278 |
| -.100 | 2.5048 | 2.4674 | 2.4296 | 2.3908 | 2.3514 | 2.3108 | 2.2696 | 2.2278 | 2.1848 | 2.1408 | 2.0958 | 2.0494 | 2.0020 | 1.9534 | 1.9534 |
| -.150 | 2.5430 | 2.5060 | 2.4688 | 2.4308 | 2.3928 | 2.3526 | 2.3120 | 2.2708 | 2.2288 | 2.1858 | 2.1418 | 2.0968 | 2.0504 | 2.0030 | 2.0030 |
| -.200 | 2.5802 | 2.5434 | 2.5076 | 2.4700 | 2.4320 | 2.3932 | 2.3536 | 2.3132 | 2.2722 | 2.2300 | 2.1870 | 2.1428 | 2.0978 | 2.0514 | 2.0514 |
| -.250 | 2.6170 | 2.5814 | 2.5454 | 2.5088 | 2.4714 | 2.4334 | 2.3946 | 2.3550 | 2.3142 | 2.2730 | 2.2312 | 2.1880 | 2.1440 | 2.0990 | 2.0990 |
| -.300 | 2.6534 | 2.6184 | 2.5828 | 2.5466 | 2.5100 | 2.4726 | 2.4346 | 2.3956 | 2.3560 | 2.3156 | 2.2744 | 2.2324 | 2.1892 | 2.1450 | 2.1450 |
| -.400 | 2.7212 | 2.6904 | 2.6562 | 2.6210 | 2.5856 | 2.5494 | 2.5126 | 2.4750 | 2.4370 | 2.3980 | 2.3584 | 2.3180 | 2.2766 | 2.2346 | 2.2346 |
| -.500 | 2.7934 | 2.7604 | 2.7270 | 2.6932 | 2.6588 | 2.6238 | 2.5882 | 2.5520 | 2.5150 | 2.4776 | 2.4396 | 2.4006 | 2.3610 | 2.3202 | 2.3202 |
| -.600 | 2.8606 | 2.8284 | 2.7962 | 2.7632 | 2.7300 | 2.6960 | 2.6614 | 2.6264 | 2.5908 | 2.5546 | 2.5178 | 2.4802 | 2.4420 | 2.4030 | 2.4030 |
| -.700 | 2.9262 | 2.8950 | 2.8636 | 2.8312 | 2.7992 | 2.7662 | 2.7328 | 2.6988 | 2.6644 | 2.6290 | 2.5936 | 2.5572 | 2.5204 | 2.4828 | 2.4828 |
| -.800 | 2.9902 | 2.9600 | 2.9292 | 2.8982 | 2.8666 | 2.8342 | 2.8020 | 2.7690 | 2.7356 | 2.7014 | 2.6670 | 2.6318 | 2.5962 | 2.5598 | 2.5598 |

| $\frac{\Delta H}{q_o}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2004 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .6644 | 0.1910 | 0.2006 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .9174 | .8014 | .6650 | 0.4916 | 0.2008 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1142 | 1.0212 | .9184 | .8022 | .6656 | 0.4920 | 0.2010 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.2808 | 1.2008 | 1.1154 | 1.0222 | .9192 | .8030 | .6664 | 0.4924 | 0.2012 | ----- | ----- | ----- | ----- | ----- |
| .300 | 1.4276 | 1.3568 | 1.2820 | 1.2020 | 1.1164 | 1.0232 | .9202 | .8038 | .6670 | 0.4930 | 0.2014 | ----- | ----- | ----- |
| .250 | 1.4956 | 1.4284 | 1.3574 | 1.2826 | 1.2026 | 1.1170 | 1.0236 | .9206 | .8042 | .6674 | .4932 | 0.2016 | ----- | ----- |
| .200 | 1.5606 | 1.4964 | 1.4290 | 1.3582 | 1.2834 | 1.2032 | 1.1176 | 1.0242 | .9210 | .8046 | .6676 | .4934 | 0.2018 | ----- |
| .150 | 1.6228 | 1.5612 | 1.4970 | 1.4298 | 1.3590 | 1.2840 | 1.2038 | 1.1182 | 1.0246 | .9216 | .8050 | .6680 | .4936 | 0.2016 |
| .100 | 1.6828 | 1.6236 | 1.5620 | 1.4978 | 1.4304 | 1.3596 | 1.2846 | 1.2046 | 1.1186 | 1.0252 | .9220 | .8054 | .6682 | 0.2016 |
| .075 | 1.7118 | 1.6540 | 1.5936 | 1.5308 | 1.4850 | 1.3958 | 1.3230 | 1.2456 | 1.1624 | 1.0732 | .9754 | .8660 | .7404 | 0.6682 |
| .050 | 1.7406 | 1.6836 | 1.6244 | 1.5628 | 1.4986 | 1.4312 | 1.3604 | 1.2852 | 1.2052 | 1.1192 | 1.0256 | .9224 | .8058 | 0.6682 |
| .025 | 1.7688 | 1.7128 | 1.6548 | 1.5944 | 1.5314 | 1.4856 | 1.3966 | 1.3236 | 1.2462 | 1.1632 | 1.0736 | .9758 | .8664 | 0.6682 |
| 0 | 1.7964 | 1.7414 | 1.6844 | 1.6252 | 1.5636 | 1.4794 | 1.4318 | 1.3610 | 1.2858 | 1.2058 | 1.1198 | 1.0262 | .9228 | 0.6682 |
| -.025 | 1.8238 | 1.7696 | 1.7138 | 1.6556 | 1.5952 | 1.5322 | 1.4864 | 1.3972 | 1.3242 | 1.2468 | 1.1636 | 1.0742 | .9762 | 0.6682 |
| -.050 | 1.8506 | 1.7972 | 1.7424 | 1.6852 | 1.6260 | 1.5644 | 1.5000 | 1.4326 | 1.3616 | 1.2866 | 1.2064 | 1.1204 | 1.0266 | 0.6682 |
| -.075 | 1.8770 | 1.8248 | 1.7704 | 1.7146 | 1.6564 | 1.5960 | 1.5330 | 1.4672 | 1.3978 | 1.3250 | 1.2474 | 1.1642 | 1.0746 | 0.6682 |
| -.100 | 1.9032 | 1.8514 | 1.7982 | 1.7432 | 1.6862 | 1.6268 | 1.5652 | 1.5008 | 1.4334 | 1.3624 | 1.2870 | 1.2070 | 1.1208 | 0.6682 |
| -.150 | 1.9544 | 1.9042 | 1.8526 | 1.7990 | 1.7442 | 1.6870 | 1.6276 | 1.5660 | 1.5016 | 1.4340 | 1.3630 | 1.2878 | 1.2074 | 0.6682 |
| -.200 | 2.0040 | 1.9552 | 1.9050 | 1.8534 | 1.8000 | 1.7450 | 1.6878 | 1.6286 | 1.5666 | 1.5024 | 1.4348 | 1.3638 | 1.2884 | 0.6682 |
| -.250 | 2.0524 | 2.0050 | 1.9562 | 1.9060 | 1.8544 | 1.8008 | 1.7458 | 1.6886 | 1.6296 | 1.5676 | 1.5032 | 1.4354 | 1.3642 | 0.6682 |
| -.300 | 2.1000 | 2.0536 | 2.0062 | 1.9572 | 1.9070 | 1.8554 | 1.8018 | 1.7468 | 1.6894 | 1.6302 | 1.5682 | 1.5038 | 1.4362 | 0.6682 |
| -.400 | 2.1914 | 2.1472 | 2.1020 | 2.0558 | 2.0082 | 1.9592 | 1.9088 | 1.8572 | 1.8038 | 1.7484 | 1.6912 | 1.6318 | 1.5700 | 0.6682 |
| -.500 | 2.2792 | 2.2368 | 2.1936 | 2.1494 | 2.1042 | 2.0578 | 2.0102 | 1.9612 | 1.9108 | 1.8590 | 1.8052 | 1.7502 | 1.6930 | 0.6682 |
| -.600 | 2.3634 | 2.3226 | 2.2814 | 2.2390 | 2.1958 | 2.1516 | 2.1062 | 2.0598 | 2.0122 | 1.9630 | 1.9126 | 1.8608 | 1.8070 | 0.6682 |
| -.700 | 2.4444 | 2.4054 | 2.3656 | 2.3252 | 2.2836 | 2.2412 | 2.1980 | 2.1538 | 2.1086 | 2.0620 | 2.0142 | 1.9652 | 1.9146 | 0.6682 |
| -.800 | 2.5232 | 2.4852 | 2.4468 | 2.4080 | 2.3684 | 2.3274 | 2.2860 | 2.2436 | 2.2002 | 2.1560 | 2.1106 | 2.0640 | 2.0160 | 0.6682 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_0 = 0.25]$

| $\frac{p_1}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6692 | 1.6118 | 1.5520 | 1.4894 | 1.4238 | 1.3544 | 1.2814 | 1.2032 | 1.1194 | 1.0280 | 0.9274 | 0.8138 | 0.6808 | 0.5138 |
| .700 | 1.7806 | 1.7272 | 1.6718 | 1.6144 | 1.5544 | 1.4918 | 1.4262 | 1.3566 | 1.2834 | 1.2052 | 1.1210 | 1.0296 | .9288 | .8152 |
| .600 | 1.8852 | 1.8350 | 1.7834 | 1.7300 | 1.6744 | 1.6170 | 1.5570 | 1.4944 | 1.4284 | 1.3590 | 1.2854 | 1.2070 | 1.1228 | 1.0312 |
| .500 | 1.9858 | 1.9368 | 1.8882 | 1.8382 | 1.7864 | 1.7328 | 1.6774 | 1.6196 | 1.5596 | 1.4966 | 1.4306 | 1.3610 | 1.2874 | 1.2088 |
| .400 | 2.0776 | 2.0330 | 1.9870 | 1.9398 | 1.8912 | 1.8412 | 1.7892 | 1.7358 | 1.6800 | 1.6222 | 1.5620 | 1.4990 | 1.4328 | 1.3632 |
| .300 | 2.1672 | 2.1246 | 2.0810 | 2.0364 | 1.9904 | 1.9432 | 1.8946 | 1.8442 | 1.7924 | 1.7386 | 1.6828 | 1.6246 | 1.5644 | 1.5014 |
| .250 | 2.2104 | 2.1688 | 2.1266 | 2.0826 | 2.0380 | 1.9920 | 1.9448 | 1.8960 | 1.8456 | 1.7936 | 1.7398 | 1.6842 | 1.6260 | 1.5658 |
| .200 | 2.2526 | 2.2122 | 2.1708 | 2.1282 | 2.0844 | 2.0396 | 1.9938 | 1.9464 | 1.8976 | 1.8472 | 1.7952 | 1.7412 | 1.6854 | 1.6272 |
| .150 | 2.2944 | 2.2544 | 2.2110 | 2.1724 | 2.1300 | 2.0860 | 2.0414 | 1.9954 | 1.9478 | 1.8990 | 1.8486 | 1.7966 | 1.7426 | 1.6868 |
| .100 | 2.3348 | 2.2962 | 2.2562 | 2.2158 | 2.1744 | 2.1316 | 2.0880 | 2.0428 | 1.9970 | 1.9494 | 1.9004 | 1.8500 | 1.7980 | 1.7440 |
| .075 | 2.3548 | 2.3166 | 2.2774 | 2.2372 | 2.1960 | 2.1540 | 2.1108 | 2.0664 | 2.0210 | 1.9740 | 1.9258 | 1.8760 | 1.8250 | 1.7720 |
| .050 | 2.3748 | 2.3368 | 2.2980 | 2.2584 | 2.2176 | 2.1760 | 2.1334 | 2.0896 | 2.0448 | 1.9984 | 1.9508 | 1.9020 | 1.8516 | 1.7996 |
| .025 | 2.3948 | 2.3572 | 2.3186 | 2.2792 | 2.2390 | 2.1978 | 2.1556 | 2.1126 | 2.0680 | 2.0224 | 1.9756 | 1.9276 | 1.8778 | 1.8264 |
| 0 | 2.4142 | 2.3770 | 2.3390 | 2.2998 | 2.2604 | 2.2194 | 2.1778 | 2.1350 | 2.0912 | 2.0464 | 2.0000 | 1.9524 | 1.9036 | 1.8530 |
| -.025 | 2.4344 | 2.3966 | 2.3590 | 2.3204 | 2.2810 | 2.2408 | 2.1998 | 2.1574 | 2.1142 | 2.0698 | 2.0240 | 1.9772 | 1.9290 | 1.8792 |
| -.050 | 2.4526 | 2.4144 | 2.3770 | 2.3384 | 2.3018 | 2.2620 | 2.2212 | 2.1796 | 2.1368 | 2.0928 | 2.0478 | 2.0016 | 1.9540 | 1.9052 |
| -.075 | 2.4718 | 2.4334 | 2.3966 | 2.3584 | 2.3220 | 2.2830 | 2.2426 | 2.2016 | 2.1592 | 2.1160 | 2.0714 | 2.0256 | 1.9788 | 1.9306 |
| -.100 | 2.4906 | 2.4516 | 2.4142 | 2.3780 | 2.3428 | 2.3058 | 2.2644 | 2.2230 | 2.1814 | 2.1386 | 2.0944 | 2.0496 | 2.0032 | 1.9554 |
| -.150 | 2.5280 | 2.4926 | 2.4568 | 2.4202 | 2.3828 | 2.3446 | 2.3054 | 2.2658 | 2.2250 | 2.1830 | 2.1402 | 2.0962 | 2.0512 | 2.0050 |
| -.200 | 2.5646 | 2.5302 | 2.4950 | 2.4588 | 2.4222 | 2.3848 | 2.3466 | 2.3074 | 2.2676 | 2.2268 | 2.1848 | 2.1420 | 2.0982 | 2.0530 |
| -.250 | 2.6006 | 2.5668 | 2.5322 | 2.4968 | 2.4608 | 2.4244 | 2.3868 | 2.3484 | 2.3094 | 2.2692 | 2.2284 | 2.1866 | 2.1436 | 2.0998 |
| -.300 | 2.6362 | 2.6028 | 2.5690 | 2.5344 | 2.4990 | 2.4630 | 2.4262 | 2.3886 | 2.3504 | 2.3114 | 2.2710 | 2.2302 | 2.1882 | 2.1454 |
| -.400 | 2.7058 | 2.6736 | 2.6406 | 2.6074 | 2.5732 | 2.5386 | 2.5032 | 2.4670 | 2.4304 | 2.3928 | 2.3542 | 2.3148 | 2.2748 | 2.2340 |
| -.500 | 2.7758 | 2.7422 | 2.7104 | 2.6782 | 2.6452 | 2.6116 | 2.5778 | 2.5428 | 2.5072 | 2.4710 | 2.4340 | 2.3966 | 2.3588 | 2.3188 |
| -.600 | 2.8392 | 2.8092 | 2.7784 | 2.7470 | 2.7150 | 2.6824 | 2.6496 | 2.6160 | 2.5822 | 2.5470 | 2.5112 | 2.4750 | 2.4382 | 2.4004 |
| -.700 | 2.9034 | 2.8744 | 2.8442 | 2.8138 | 2.7830 | 2.7514 | 2.7196 | 2.6870 | 2.6540 | 2.6204 | 2.5860 | 2.5508 | 2.5152 | 2.4790 |
| -.800 | 2.9662 | 2.9376 | 2.9086 | 2.8788 | 2.8492 | 2.8186 | 2.7878 | 2.7560 | 2.7242 | 2.6918 | 2.6582 | 2.6242 | 2.5902 | 2.5552 |

| $\frac{p_1}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2514 | 0.2514 | 0.2518 | 0.2518 | 0.2522 | 0.2522 | 0.2526 | 0.2526 | 0.2530 | 0.2534 | 0.2538 | 0.2542 | 0.2546 |
| .700 | .6818 | .6818 | .6830 | .6830 | .6840 | .6840 | .6852 | .6852 | .6862 | .6868 | .6872 | .6878 | .6882 |
| .600 | .9302 | .9302 | .9316 | .9316 | .9332 | .9332 | .9346 | .9346 | .9362 | .9368 | .9372 | .9378 | .9382 |
| .500 | 1.1242 | 1.0328 | .9316 | .8176 | .6840 | 0.5162 | 0.2526 | 0.2526 | .8202 | .6868 | .5182 | .2536 | .2536 |
| .400 | 1.2892 | 1.2108 | 1.1262 | 1.0344 | .9332 | .8188 | .6852 | 0.5170 | 0.2530 | .8208 | .6868 | .5182 | .2536 |
| .300 | 1.4348 | 1.3652 | 1.2914 | 1.2128 | 1.1280 | 1.0360 | .9346 | .8202 | .6862 | .5178 | .2534 | .2536 | .2536 |
| .250 | 1.5022 | 1.4360 | 1.3662 | 1.2924 | 1.2136 | 1.1288 | 1.0368 | .9354 | .8208 | .6868 | .5182 | .2536 | .2536 |
| .200 | 1.5666 | 1.5034 | 1.4372 | 1.3674 | 1.2934 | 1.2146 | 1.1298 | 1.0378 | .9362 | .8214 | .6872 | .5186 | .2538 |
| .150 | 1.6282 | 1.5680 | 1.5046 | 1.4384 | 1.3684 | 1.2944 | 1.2156 | 1.1306 | 1.0384 | .9368 | .8220 | .6878 | .5190 |
| .100 | 1.6878 | 1.6298 | 1.5692 | 1.5058 | 1.4394 | 1.3696 | 1.2954 | 1.2166 | 1.1316 | 1.0394 | .9376 | .8228 | .6882 |
| .075 | 1.7168 | 1.6596 | 1.6006 | 1.5384 | 1.4736 | 1.4056 | 1.3338 | 1.2572 | 1.1754 | 1.0870 | .9902 | .8824 | .7586 |
| .050 | 1.7450 | 1.6892 | 1.6310 | 1.5704 | 1.5070 | 1.4406 | 1.3706 | 1.2964 | 1.2176 | 1.1324 | 1.0402 | .9382 | .8232 |
| .025 | 1.7732 | 1.7182 | 1.6610 | 1.6018 | 1.5398 | 1.4748 | 1.4066 | 1.3348 | 1.2582 | 1.1762 | 1.0878 | .9910 | .8830 |
| 0 | 1.8006 | 1.7466 | 1.6906 | 1.6324 | 1.5716 | 1.5082 | 1.4418 | 1.3718 | 1.2974 | 1.2186 | 1.1332 | 1.0410 | .9392 |
| -.025 | 1.8274 | 1.7746 | 1.7194 | 1.6622 | 1.6030 | 1.5412 | 1.4760 | 1.4078 | 1.3358 | 1.2592 | 1.1770 | 1.0886 | .9918 |
| -.050 | 1.8542 | 1.8020 | 1.7480 | 1.6918 | 1.6336 | 1.5730 | 1.5094 | 1.4430 | 1.3728 | 1.2986 | 1.2194 | 1.1342 | 1.0418 |
| -.075 | 1.8804 | 1.8290 | 1.7760 | 1.7208 | 1.6636 | 1.6044 | 1.5424 | 1.4772 | 1.4090 | 1.3368 | 1.2600 | 1.1780 | 1.0894 |
| -.100 | 1.9064 | 1.8556 | 1.8034 | 1.7494 | 1.6932 | 1.6350 | 1.5742 | 1.5108 | 1.4440 | 1.3740 | 1.2994 | 1.2204 | 1.1350 |
| -.150 | 1.9568 | 1.9078 | 1.8572 | 1.8048 | 1.7508 | 1.6946 | 1.6362 | 1.5754 | 1.5118 | 1.4442 | 1.3750 | 1.3004 | 1.2212 |
| -.200 | 2.0062 | 1.9584 | 1.9094 | 1.8586 | 1.8064 | 1.7522 | 1.6960 | 1.6376 | 1.5766 | 1.5130 | 1.4462 | 1.3762 | 1.3014 |
| -.250 | 2.0542 | 2.0078 | 1.9600 | 1.9108 | 1.8600 | 1.8078 | 1.7536 | 1.6972 | 1.6388 | 1.5780 | 1.5144 | 1.4474 | 1.3770 |
| -.300 | 2.1010 | 2.0558 | 2.0094 | 1.9616 | 1.9126 | 1.8616 | 1.8092 | 1.7552 | 1.6988 | 1.6402 | 1.5790 | 1.5156 | 1.4486 |
| -.400 | 2.1914 | 2.1486 | 2.1044 | 2.0592 | 2.0126 | 1.9648 | 1.9156 | 1.8646 | 1.8122 | 1.7578 | 1.7014 | 1.6426 | 1.5816 |
| -.500 | 2.2780 | 2.2372 | 2.1950 | 2.1520 | 2.1078 | 2.0626 | 2.0158 | 1.9680 | 1.9188 | 1.8676 | 1.8150 | 1.7606 | 1.7038 |
| -.600 | 2.3614 | 2.3222 | 2.2818 | 2.2408 | 2.1984 | 2.1554 | 2.1114 | 2.0660 | 2.0192 | 1.9714 | 1.9216 | 1.8704 | 1.8176 |
| -.700 | 2.4418 | 2.4040 | 2.3654 | 2.3258 | 2.2854 | 2.2444 | 2.2022 | 2.1592 | 2.1148 | 2.0690 | 2.0222 | 1.9742 | 1.9244 |
| -.800 | 2.5188 | 2.4826 | 2.4456 | 2.4080 | 2.3692 | 2.3296 | 2.2894 | 2.2482 | 2.2060 | 2.1626 | 2.1180 | 2.0724 | 2.0252 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

 $[M_0 = 0.30]$

| $\frac{p_1}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6670 | 1.6112 | 1.5528 | 1.4920 | 1.4276 | 1.3602 | 1.2882 | 1.2116 | 1.1294 | 1.0402 | 0.9414 | 0.8304 | 0.7014 | 0.5406 | 0.3422 |
| .700 | 1.7768 | 1.7250 | 1.6708 | 1.6150 | 1.5566 | 1.4954 | 1.4308 | 1.3632 | 1.2912 | 1.2144 | 1.1320 | 1.0426 | 0.9436 | 0.8322 | 0.7014 |
| .600 | 1.8794 | 1.8312 | 1.7806 | 1.7290 | 1.6750 | 1.6188 | 1.5600 | 1.4988 | 1.4344 | 1.3662 | 1.2942 | 1.2172 | 1.1346 | 1.0450 | 0.9450 |
| .500 | 1.9764 | 1.9310 | 1.8838 | 1.8356 | 1.7852 | 1.7330 | 1.6788 | 1.6226 | 1.5636 | 1.5024 | 1.4376 | 1.3696 | 1.2972 | 1.2200 | 1.1326 |
| .400 | 2.0686 | 2.0256 | 1.9810 | 1.9358 | 1.8884 | 1.8398 | 1.7894 | 1.7372 | 1.6830 | 1.6264 | 1.5672 | 1.5056 | 1.4410 | 1.3726 | 1.2972 |
| .300 | 2.1564 | 2.1156 | 2.0734 | 2.0306 | 1.9860 | 1.9402 | 1.8926 | 1.8440 | 1.7936 | 1.7412 | 1.6868 | 1.6300 | 1.5710 | 1.5092 | 1.4410 |
| .250 | 2.1988 | 2.1589 | 2.1180 | 2.0762 | 2.0329 | 2.0082 | 1.9424 | 1.8952 | 1.8462 | 1.7956 | 1.7432 | 1.6887 | 1.6319 | 1.5727 | 1.5092 |
| .200 | 2.2404 | 2.2014 | 2.1614 | 2.1206 | 2.0786 | 2.0352 | 1.9904 | 1.9448 | 1.8974 | 1.8484 | 1.7976 | 1.7452 | 1.6906 | 1.6338 | 1.5727 |
| .150 | 2.2811 | 2.2433 | 2.2040 | 2.1641 | 2.1231 | 2.0810 | 2.0376 | 1.9930 | 1.9470 | 1.8997 | 1.8506 | 1.7996 | 1.7472 | 1.6926 | 1.6338 |
| .100 | 2.3210 | 2.2840 | 2.2456 | 2.2066 | 2.1668 | 2.1254 | 2.0834 | 2.0400 | 1.9956 | 1.9492 | 1.9018 | 1.8526 | 1.8020 | 1.7494 | 1.6926 |
| .075 | 2.3406 | 2.3040 | 2.2662 | 2.2280 | 2.1882 | 2.1476 | 2.1059 | 2.0630 | 2.0190 | 1.9736 | 1.9268 | 1.8785 | 1.8286 | 1.7768 | 1.7226 |
| .050 | 2.3602 | 2.3238 | 2.2863 | 2.2486 | 2.2095 | 2.1695 | 2.1282 | 2.0859 | 2.0426 | 1.9977 | 1.9516 | 1.9039 | 1.8549 | 1.8039 | 1.7506 |
| .025 | 2.3796 | 2.3436 | 2.3067 | 2.2691 | 2.2305 | 2.1908 | 2.1501 | 2.1086 | 2.0656 | 2.0215 | 1.9758 | 1.9289 | 1.8807 | 1.8306 | 1.7776 |
| 0 | 2.3988 | 2.3632 | 2.3264 | 2.2894 | 2.2512 | 2.2120 | 2.1718 | 2.1308 | 2.0884 | 2.0448 | 2.0000 | 1.9538 | 1.9062 | 1.8570 | 1.8062 |
| -.025 | 2.4177 | 2.3824 | 2.3460 | 2.3095 | 2.2718 | 2.2331 | 2.1933 | 2.1527 | 2.1110 | 2.0681 | 2.0238 | 1.9782 | 1.9314 | 1.8828 | 1.8326 |
| -.050 | 2.4363 | 2.4016 | 2.3657 | 2.3296 | 2.2921 | 2.2540 | 2.2146 | 2.1746 | 2.1334 | 2.0908 | 2.0472 | 2.0024 | 1.9560 | 1.9083 | 1.8596 |
| -.075 | 2.4551 | 2.4206 | 2.3848 | 2.3492 | 2.3122 | 2.2746 | 2.2357 | 2.1960 | 2.1553 | 2.1134 | 2.0704 | 2.0260 | 1.9806 | 1.9336 | 1.8856 |
| -.100 | 2.4734 | 2.4394 | 2.4042 | 2.3690 | 2.3322 | 2.2950 | 2.2566 | 2.2174 | 2.1770 | 2.1358 | 2.0932 | 2.0494 | 2.0048 | 1.9584 | 1.9106 |
| -.150 | 2.5098 | 2.4763 | 2.4422 | 2.4074 | 2.3716 | 2.3351 | 2.2974 | 2.2594 | 2.2200 | 2.1795 | 2.1382 | 2.0957 | 2.0521 | 2.0070 | 1.9606 |
| -.200 | 2.5458 | 2.5128 | 2.4792 | 2.4454 | 2.4102 | 2.3746 | 2.3378 | 2.3004 | 2.2618 | 2.2224 | 2.1822 | 2.1408 | 2.0982 | 2.0544 | 2.0096 |
| -.250 | 2.5826 | 2.5495 | 2.5158 | 2.4814 | 2.4462 | 2.4102 | 2.3732 | 2.3357 | 2.2974 | 2.2586 | 2.2192 | 2.1792 | 2.1386 | 2.0972 | 2.0548 |
| -.300 | 2.6198 | 2.5864 | 2.5524 | 2.5178 | 2.4824 | 2.4462 | 2.4092 | 2.3718 | 2.3336 | 2.2950 | 2.2558 | 2.2162 | 2.1762 | 2.1356 | 2.0942 |
| -.400 | 2.6838 | 2.6504 | 2.6158 | 2.5804 | 2.5442 | 2.5078 | 2.4708 | 2.4334 | 2.3958 | 2.3574 | 2.3186 | 2.2792 | 2.2396 | 2.1996 | 2.1592 |
| -.500 | 2.7496 | 2.7162 | 2.6814 | 2.6462 | 2.6102 | 2.5738 | 2.5368 | 2.4994 | 2.4618 | 2.4238 | 2.3854 | 2.3468 | 2.3078 | 2.2684 | 2.2288 |
| -.600 | 2.8140 | 2.7806 | 2.7458 | 2.7102 | 2.6742 | 2.6378 | 2.6008 | 2.5634 | 2.5258 | 2.4878 | 2.4494 | 2.4108 | 2.3718 | 2.3324 | 2.2928 |
| -.700 | 2.8764 | 2.8430 | 2.8082 | 2.7728 | 2.7368 | 2.6998 | 2.6624 | 2.6248 | 2.5870 | 2.5488 | 2.5104 | 2.4718 | 2.4328 | 2.3934 | 2.3538 |
| -.800 | 2.9376 | 2.9042 | 2.8694 | 2.8340 | 2.7982 | 2.7618 | 2.7248 | 2.6874 | 2.6498 | 2.6120 | 2.5740 | 2.5358 | 2.4974 | 2.4588 | 2.4198 |

| $\frac{p_1}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0.800 | 0.3028 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | .7030 | 0.5418 | 0.3034 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | .9456 | .8340 | .7044 | 0.5430 | 0.3040 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1370 | 1.0472 | .9478 | .8358 | .7060 | 0.5442 | 0.3048 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.3000 | 1.2228 | 1.1396 | 1.0496 | .9498 | .8376 | .7076 | 0.5454 | 0.3054 | ----- | ----- | ----- | ----- | ----- |
| .300 | 1.4442 | 1.3756 | 1.3028 | 1.2254 | 1.1422 | 1.0518 | .9518 | .8396 | .7092 | 0.5466 | 0.3060 | ----- | ----- | ----- |
| .250 | 1.5110 | 1.4459 | 1.3772 | 1.3043 | 1.2268 | 1.1435 | 1.0530 | .9529 | .8406 | .7099 | .5472 | 0.3064 | ----- | ----- |
| .200 | 1.5746 | 1.5126 | 1.4474 | 1.3786 | 1.3158 | 1.2282 | 1.1448 | 1.0542 | .9540 | .8414 | .7106 | .5478 | 0.3068 | ----- |
| .150 | 1.6357 | 1.5764 | 1.5113 | 1.4490 | 1.3802 | 1.3071 | 1.2295 | 1.1460 | 1.0553 | .9550 | .8425 | .7114 | .5483 | ----- |
| .100 | 1.6944 | 1.6376 | 1.5782 | 1.5160 | 1.4506 | 1.3816 | 1.3086 | 1.2308 | 1.1472 | 1.0564 | .9560 | .8432 | .7122 | ----- |
| .075 | 1.7231 | 1.6673 | 1.6089 | 1.5351 | 1.4645 | 1.4174 | 1.3466 | 1.2711 | 1.1906 | 1.1035 | 1.0082 | .9021 | .7810 | ----- |
| .050 | 1.7512 | 1.6964 | 1.6393 | 1.5758 | 1.5176 | 1.4524 | 1.3832 | 1.3102 | 1.2322 | 1.1485 | 1.0575 | .9570 | .8443 | ----- |
| .025 | 1.7788 | 1.7250 | 1.6691 | 1.6109 | 1.5499 | 1.4861 | 1.4190 | 1.3480 | 1.2725 | 1.1919 | 1.1047 | 1.0093 | .9031 | ----- |
| 0 | 1.8058 | 1.7532 | 1.6984 | 1.6412 | 1.5816 | 1.5192 | 1.4540 | 1.3846 | 1.3116 | 1.2336 | 1.1498 | 1.0586 | .9580 | ----- |
| -.025 | 1.8326 | 1.7807 | 1.7269 | 1.6709 | 1.6126 | 1.5516 | 1.4877 | 1.4205 | 1.3495 | 1.2739 | 1.1932 | 1.1059 | 1.0104 | ----- |
| -.050 | 1.8593 | 1.8081 | 1.7551 | 1.7002 | 1.6428 | 1.5833 | 1.5209 | 1.4555 | 1.3862 | 1.3130 | 1.2348 | 1.1510 | 1.0598 | ----- |
| -.075 | 1.8850 | 1.8346 | 1.7829 | 1.7288 | 1.6728 | 1.6144 | 1.5535 | 1.4894 | 1.4221 | 1.3510 | 1.2755 | 1.1945 | 1.1071 | ----- |
| -.100 | 1.9106 | 1.8612 | 1.8100 | 1.7570 | 1.7020 | 1.6446 | 1.5850 | 1.5226 | 1.4572 | 1.3880 | 1.3144 | 1.2362 | 1.1522 | ----- |
| -.150 | 1.9606 | 1.8925 | 1.8632 | 1.8120 | 1.7589 | 1.7038 | 1.6467 | 1.5867 | 1.5242 | 1.4587 | 1.3894 | 1.3158 | 1.2377 | ----- |
| -.200 | 2.0092 | 1.9630 | 1.9150 | 1.8652 | 1.8140 | 1.7608 | 1.7060 | 1.6484 | 1.5886 | 1.5260 | 1.4602 | 1.3910 | 1.3174 | ----- |
| -.250 | 2.0568 | 2.0116 | 1.9651 | 1.9170 | 1.8675 | 1.8162 | 1.7630 | 1.7078 | 1.6505 | 1.5904 | 1.5275 | 1.4618 | 1.3924 | ----- |
| -.300 | 2.1030 | 2.0590 | 2.0138 | 1.9672 | 1.9192 | 1.8696 | 1.8182 | 1.7650 | 1.7096 | 1.6522 | 1.5929 | 1.5294 | 1.4634 | ----- |
| -.400 | 2.1922 | 2.1506 | 2.1078 | 2.0638 | 2.0184 | 1.9718 | 1.9236 | 1.8736 | 1.8224 | 1.7690 | 1.7134 | 1.6558 | 1.5958 | ----- |
| -.500 | 2.2778 | 2.2380 | 2.1972 | 2.1554 | 2.1124 | 2.0684 | 2.0228 | 1.9760 | 1.9278 | 1.8778 | 1.8262 | 1.7728 | 1.7172 | ----- |
| -.600 | 2.3600 | 2.3220 | 2.2830 | 2.2432 | 2.2024 | 2.1604 | 2.1172 | 2.0730 | 2.0274 | 1.9806 | 1.9320 | 1.8822 | 1.8302 | ----- |
| -.700 | 2.4390 | 2.4026 | 2.3654 | 2.3272 | 2.2884 | 2.2482 | 2.2072 | 2.1652 | 2.1220 | 2.0776 | 2.0320 | 1.9850 | 1.9364 | ----- |
| -.800 | 2.5150 | 2.4800 | 2.4444 | 2.4080 | 2.3708 | 2.3320 | 2.2934 | 2.2534 | 2.2122 | 2.1700 | 2.1268 | 2.0824 | 2.0364 | ----- |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_o = 0.35]$

| $\frac{p_1}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6644 | 1.6104 | 1.5536 | 1.4944 | 1.4324 | 1.3666 | 1.2964 | 1.2218 | 1.1414 | 1.0540 | 0.9580 | 0.8500 | 0.7246 | 0.5712 |
| .700 | 1.7720 | 1.7220 | 1.6696 | 1.6156 | 1.5590 | 1.4992 | 1.4366 | 1.3706 | 1.3004 | 1.2256 | 1.1450 | 1.0572 | 0.9610 | 0.8526 |
| .600 | 1.8728 | 1.8260 | 1.7776 | 1.7276 | 1.6754 | 1.6206 | 1.5638 | 1.5040 | 1.4412 | 1.3750 | 1.3044 | 1.2294 | 1.1486 | 1.0604 |
| .500 | 1.9676 | 1.9240 | 1.8788 | 1.8322 | 1.7856 | 1.7332 | 1.6808 | 1.6260 | 1.5688 | 1.5090 | 1.4458 | 1.3792 | 1.3086 | 1.2232 |
| .400 | 2.0578 | 2.0168 | 1.9740 | 1.9306 | 1.8850 | 1.8362 | 1.7892 | 1.7388 | 1.6860 | 1.6312 | 1.5738 | 1.5136 | 1.4504 | 1.3836 |
| .300 | 2.1438 | 2.1050 | 2.0646 | 2.0236 | 1.9808 | 1.9368 | 1.8910 | 1.8438 | 1.7950 | 1.7442 | 1.6914 | 1.6364 | 1.5788 | 1.5184 |
| .250 | 2.1852 | 2.1474 | 2.1082 | 2.0682 | 2.0268 | 1.9838 | 1.9396 | 1.8942 | 1.8468 | 1.7978 | 1.7470 | 1.6944 | 1.6388 | 1.5812 |
| .200 | 2.2256 | 2.1890 | 2.1508 | 2.1118 | 2.0714 | 2.0300 | 1.9870 | 1.9430 | 1.8972 | 1.8498 | 1.8008 | 1.7500 | 1.6968 | 1.6414 |
| .150 | 2.2656 | 2.2296 | 2.1924 | 2.1544 | 2.1154 | 2.0748 | 2.0334 | 1.9904 | 1.9460 | 1.9004 | 1.8528 | 1.8036 | 1.7526 | 1.6994 |
| .100 | 2.3044 | 2.2696 | 2.2332 | 2.1962 | 2.1582 | 2.1188 | 2.0782 | 2.0368 | 1.9934 | 1.9492 | 1.9032 | 1.8558 | 1.8066 | 1.7552 |
| .075 | 2.3238 | 2.2892 | 2.2534 | 2.2166 | 2.1792 | 2.1404 | 2.1002 | 2.0592 | 2.0170 | 1.9732 | 1.9280 | 1.8812 | 1.8328 | 1.7826 |
| .050 | 2.3428 | 2.3086 | 2.2730 | 2.2370 | 2.1998 | 2.1616 | 2.1222 | 2.0818 | 2.0398 | 1.9968 | 1.9524 | 1.9064 | 1.8588 | 1.8092 |
| .025 | 2.3614 | 2.3278 | 2.2928 | 2.2572 | 2.2204 | 2.1826 | 2.1436 | 2.1038 | 2.0626 | 2.0202 | 1.9762 | 1.9312 | 1.8842 | 1.8356 |
| 0 | 2.3804 | 2.3470 | 2.3124 | 2.2772 | 2.2408 | 2.2036 | 2.1650 | 2.1258 | 2.0852 | 2.0434 | 2.0000 | 1.9556 | 1.9094 | 1.8618 |
| -.025 | 2.3988 | 2.3656 | 2.3316 | 2.2968 | 2.2604 | 2.2242 | 2.1862 | 2.1472 | 2.1070 | 2.0660 | 2.0234 | 1.9796 | 1.9340 | 1.8872 |
| -.050 | 2.4172 | 2.3844 | 2.3506 | 2.3162 | 2.2808 | 2.2450 | 2.2070 | 2.1688 | 2.1290 | 2.0886 | 2.0464 | 2.0034 | 1.9586 | 1.9124 |
| -.075 | 2.4354 | 2.4028 | 2.3694 | 2.3356 | 2.3006 | 2.2646 | 2.2276 | 2.1898 | 2.1508 | 2.1106 | 2.0692 | 2.0268 | 1.9828 | 1.9372 |
| -.100 | 2.4532 | 2.4212 | 2.3882 | 2.3546 | 2.3202 | 2.2844 | 2.2480 | 2.2106 | 2.1720 | 2.1326 | 2.0916 | 2.0498 | 2.0064 | 1.9618 |
| -.150 | 2.4888 | 2.4576 | 2.4252 | 2.3924 | 2.3586 | 2.3238 | 2.2882 | 2.2518 | 2.2142 | 2.1754 | 2.1360 | 2.0952 | 2.0532 | 2.0096 |
| -.200 | 2.5238 | 2.4930 | 2.4614 | 2.4294 | 2.3964 | 2.3624 | 2.3276 | 2.2922 | 2.2554 | 2.2178 | 2.1792 | 2.1394 | 2.0984 | 2.0562 |
| -.250 | 2.5580 | 2.5282 | 2.4972 | 2.4656 | 2.4324 | 2.3984 | 2.3636 | 2.3282 | 2.2914 | 2.2536 | 2.2152 | 2.1762 | 2.1362 | 2.1018 |
| -.300 | 2.5920 | 2.5624 | 2.5322 | 2.5014 | 2.4698 | 2.4374 | 2.4040 | 2.3702 | 2.3354 | 2.2996 | 2.2628 | 2.2252 | 2.1862 | 2.1462 |
| -.400 | 2.6580 | 2.6298 | 2.6006 | 2.5712 | 2.5410 | 2.5098 | 2.4780 | 2.4454 | 2.4120 | 2.3780 | 2.3430 | 2.3070 | 2.2702 | 2.2320 |
| -.500 | 2.7222 | 2.6952 | 2.6672 | 2.6388 | 2.6098 | 2.5800 | 2.5492 | 2.5184 | 2.4862 | 2.4538 | 2.4200 | 2.3860 | 2.3506 | 2.3146 |
| -.600 | 2.7846 | 2.7586 | 2.7318 | 2.7040 | 2.6762 | 2.6476 | 2.6182 | 2.5880 | 2.5576 | 2.5264 | 2.4944 | 2.4618 | 2.4282 | 2.3934 |
| -.700 | 2.8448 | 2.8204 | 2.7942 | 2.7676 | 2.7410 | 2.7132 | 2.6850 | 2.6566 | 2.6270 | 2.5968 | 2.5662 | 2.5348 | 2.5026 | 2.4694 |
| -.800 | 2.9044 | 2.8798 | 2.8542 | 2.8296 | 2.8040 | 2.7770 | 2.7500 | 2.7224 | 2.6940 | 2.6652 | 2.6358 | 2.6058 | 2.5748 | 2.5430 |

| $\frac{p_1}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3544 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 0.7268 | 0.5730 | 0.3554 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 0.9638 | 0.8550 | 0.7290 | 0.5746 | 0.3564 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1520 | 1.0638 | 0.9668 | 0.8576 | 0.7312 | 0.5764 | 0.3576 | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.3124 | 1.2370 | 1.1554 | 1.0670 | 0.9696 | 0.8602 | 0.7334 | 0.5780 | 0.3586 | ----- | ----- | ----- | ----- |
| .300 | 1.4548 | 1.3876 | 1.3166 | 1.2406 | 1.1588 | 1.0702 | 0.9726 | 0.8626 | 0.7354 | 0.5796 | 0.3596 | ----- | ----- |
| .250 | 1.5206 | 1.4570 | 1.3898 | 1.3186 | 1.2424 | 1.1606 | 1.0718 | 0.9742 | 0.8640 | 0.7364 | 0.5808 | 0.3602 | ----- |
| .200 | 1.5836 | 1.5230 | 1.4592 | 1.3920 | 1.3206 | 1.2442 | 1.1622 | 1.0734 | 0.9752 | 0.8654 | 0.7376 | 0.5814 | 0.3606 |
| .150 | 1.6440 | 1.5860 | 1.5254 | 1.4614 | 1.3940 | 1.3226 | 1.2462 | 1.1642 | 1.0750 | 0.9768 | 0.8668 | 0.7386 | 0.5824 |
| .100 | 1.7022 | 1.6464 | 1.5886 | 1.5276 | 1.4634 | 1.3962 | 1.3248 | 1.2480 | 1.1660 | 1.0764 | 0.9784 | 0.8678 | 0.5838 |
| .075 | 1.7302 | 1.6758 | 1.6190 | 1.5596 | 1.4974 | 1.4314 | 1.3618 | 1.2880 | 1.2086 | 1.1228 | 1.0294 | 0.9254 | 0.8072 |
| .050 | 1.7580 | 1.7046 | 1.6490 | 1.5908 | 1.5298 | 1.4658 | 1.3984 | 1.3266 | 1.2500 | 1.1676 | 1.0780 | 0.9798 | 0.8692 |
| .025 | 1.7852 | 1.7328 | 1.6784 | 1.6214 | 1.5620 | 1.4996 | 1.4338 | 1.3640 | 1.2900 | 1.2104 | 1.1246 | 1.0308 | 0.9268 |
| 0 | 1.8122 | 1.7606 | 1.7074 | 1.6516 | 1.5932 | 1.5322 | 1.4680 | 1.4004 | 1.3286 | 1.2518 | 1.1694 | 1.0798 | 0.9812 |
| -.025 | 1.8386 | 1.7880 | 1.7354 | 1.6810 | 1.6238 | 1.5644 | 1.5018 | 1.4368 | 1.3660 | 1.2918 | 1.2122 | 1.1262 | 1.0324 |
| -.050 | 1.8646 | 1.8154 | 1.7634 | 1.7098 | 1.6546 | 1.5958 | 1.5344 | 1.4702 | 1.4026 | 1.3304 | 1.2538 | 1.1710 | 1.0812 |
| -.075 | 1.8902 | 1.8412 | 1.7908 | 1.7382 | 1.6836 | 1.6264 | 1.5668 | 1.5040 | 1.4380 | 1.3680 | 1.2938 | 1.2140 | 1.1280 |
| -.100 | 1.9152 | 1.8674 | 1.8178 | 1.7662 | 1.7124 | 1.6566 | 1.5982 | 1.5366 | 1.4726 | 1.4044 | 1.3326 | 1.2554 | 1.1726 |
| -.150 | 1.9648 | 1.9182 | 1.8702 | 1.8204 | 1.7688 | 1.7150 | 1.6606 | 1.6006 | 1.5392 | 1.4718 | 1.4066 | 1.3344 | 1.2572 |
| -.200 | 2.0126 | 1.9676 | 1.9214 | 1.8730 | 1.8232 | 1.7716 | 1.7176 | 1.6616 | 1.6028 | 1.5414 | 1.4772 | 1.4086 | 1.3364 |
| -.250 | 2.0594 | 2.0158 | 1.9708 | 1.9242 | 1.8760 | 1.8262 | 1.7742 | 1.7202 | 1.6642 | 1.6054 | 1.5440 | 1.4792 | 1.4106 |
| -.300 | 2.1050 | 2.0628 | 2.0190 | 1.9738 | 1.9272 | 1.8788 | 1.8288 | 1.7770 | 1.7230 | 1.6664 | 1.6078 | 1.5460 | 1.4812 |
| -.400 | 2.1930 | 2.1530 | 2.1116 | 2.0692 | 2.0252 | 1.9800 | 1.9332 | 1.8846 | 1.8344 | 1.7822 | 1.7282 | 1.6714 | 1.6126 |
| -.500 | 2.2774 | 2.2392 | 2.2000 | 2.1598 | 2.1182 | 2.0756 | 2.0314 | 1.9860 | 1.9390 | 1.8902 | 1.8398 | 1.7876 | 1.7332 |
| -.600 | 2.3580 | 2.3220 | 2.2844 | 2.2462 | 2.2070 | 2.1664 | 2.1248 | 2.0820 | 2.0376 | 1.9918 | 1.9448 | 1.8960 | 1.8454 |
| -.700 | 2.4356 | 2.4010 | 2.3656 | 2.3292 | 2.2916 | 2.2530 | 2.2138 | 2.1730 | 2.1312 | 2.0882 | 2.0438 | 1.9980 | 1.9506 |
| -.800 | 2.5106 | 2.4772 | 2.4428 | 2.4084 | 2.3730 | 2.3372 | 2.2988 | 2.2602 | 2.2202 | 2.1794 | 2.1378 | 2.0944 | 2.0498 |

TABLE II - Continued

VALUES OF $2 \left(\frac{\rho_1}{\rho_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_0 = 0.40]$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 1.6606 | 1.6088 | 1.5542 | 1.4972 | 1.4370 | 1.3732 | 1.3054 | 1.2330 | 1.1548 | 1.0698 | 0.9766 | 0.8716 | 0.7510 | 0.6046 | |
| .700 | 1.7658 | 1.7180 | 1.6678 | 1.6158 | 1.5610 | 1.5036 | 1.4430 | 1.3790 | 1.3108 | 1.2380 | 1.1594 | 1.0740 | .9804 | .8752 | |
| .600 | 1.8642 | 1.8198 | 1.7752 | 1.7256 | 1.6752 | 1.6226 | 1.5678 | 1.5100 | 1.4492 | 1.3848 | 1.3162 | 1.2428 | 1.1642 | 1.0786 | |
| .500 | 1.9568 | 1.9158 | 1.8722 | 1.8278 | 1.7814 | 1.7330 | 1.6824 | 1.6298 | 1.5744 | 1.5164 | 1.4550 | 1.3902 | 1.3216 | 1.2480 | |
| .400 | 2.0448 | 2.0062 | 1.9654 | 1.9242 | 1.8806 | 1.8360 | 1.7890 | 1.7402 | 1.6896 | 1.6366 | 1.5808 | 1.5222 | 1.4610 | 1.3960 | |
| .300 | 2.1286 | 2.0920 | 2.0538 | 2.0150 | 1.9744 | 1.9326 | 1.8888 | 1.8436 | 1.7966 | 1.7476 | 1.6968 | 1.6434 | 1.5874 | 1.5290 | |
| .250 | 2.1690 | 2.1334 | 2.0962 | 2.0588 | 2.0194 | 1.9786 | 1.9366 | 1.8930 | 1.8476 | 1.8004 | 1.7514 | 1.7000 | 1.6466 | 1.5906 | |
| .200 | 2.2086 | 2.1738 | 2.1380 | 2.1014 | 2.0634 | 2.0240 | 1.9830 | 1.9408 | 1.8974 | 1.8514 | 1.8042 | 1.7548 | 1.7036 | 1.6502 | |
| .150 | 2.2472 | 2.2136 | 2.1784 | 2.1430 | 2.1060 | 2.0678 | 2.0282 | 1.9874 | 1.9450 | 1.9010 | 1.8554 | 1.8078 | 1.7584 | 1.7072 | |
| .100 | 2.2850 | 2.2524 | 2.2182 | 2.1838 | 2.1478 | 2.1108 | 2.0722 | 2.0326 | 1.9916 | 1.9490 | 1.9050 | 1.8592 | 1.8116 | 1.7624 | |
| .075 | 2.3038 | 2.2714 | 2.2378 | 2.2038 | 2.1684 | 2.1316 | 2.0940 | 2.0548 | 2.0142 | 1.9726 | 1.9292 | 1.8842 | 1.8376 | 1.7890 | |
| .050 | 2.3222 | 2.2906 | 2.2570 | 2.2234 | 2.1886 | 2.1524 | 2.1152 | 2.0768 | 2.0370 | 1.9958 | 1.9530 | 1.9088 | 1.8628 | 1.8156 | |
| .025 | 2.3406 | 2.3092 | 2.2762 | 2.2432 | 2.2088 | 2.1730 | 2.1362 | 2.0984 | 2.0592 | 2.0188 | 1.9768 | 1.9330 | 1.8880 | 1.8416 | |
| 0 | 2.3588 | 2.3276 | 2.2952 | 2.2624 | 2.2286 | 2.1934 | 2.1572 | 2.1198 | 2.0812 | 2.0414 | 2.0000 | 1.9572 | 1.9128 | 1.8672 | |
| -.025 | 2.3770 | 2.3460 | 2.3140 | 2.2818 | 2.2486 | 2.2134 | 2.1776 | 2.1410 | 2.1030 | 2.0636 | 2.0230 | 1.9806 | 1.9372 | 1.8920 | |
| -.050 | 2.3946 | 2.3642 | 2.3326 | 2.3008 | 2.2676 | 2.2334 | 2.1982 | 2.1618 | 2.1242 | 2.0856 | 2.0456 | 2.0040 | 1.9612 | 1.9170 | |
| -.075 | 2.4122 | 2.3822 | 2.3510 | 2.3196 | 2.2868 | 2.2532 | 2.2182 | 2.1826 | 2.1456 | 2.1074 | 2.0680 | 2.0270 | 1.9848 | 1.9414 | |
| -.100 | 2.4296 | 2.4000 | 2.3692 | 2.3378 | 2.3058 | 2.2724 | 2.2382 | 2.2030 | 2.1664 | 2.1290 | 2.0900 | 2.0496 | 2.0082 | 1.9652 | |
| -.150 | 2.4640 | 2.4352 | 2.4050 | 2.3748 | 2.3434 | 2.3110 | 2.2774 | 2.2432 | 2.2078 | 2.1712 | 2.1334 | 2.0944 | 2.0540 | 2.0126 | |
| -.200 | 2.4980 | 2.4698 | 2.4404 | 2.4118 | 2.3802 | 2.3484 | 2.3160 | 2.2826 | 2.2480 | 2.2126 | 2.1758 | 2.1378 | 2.0988 | 2.0584 | |
| -.250 | 2.5312 | 2.5038 | 2.4752 | 2.4464 | 2.4164 | 2.3856 | 2.3536 | 2.3212 | 2.2876 | 2.2528 | 2.2172 | 2.1802 | 2.1424 | 2.1034 | |
| -.300 | 2.5644 | 2.5372 | 2.5092 | 2.4812 | 2.4520 | 2.4218 | 2.3906 | 2.3588 | 2.3262 | 2.2924 | 2.2578 | 2.2218 | 2.1848 | 2.1470 | |
| -.400 | 2.6280 | 2.6024 | 2.5754 | 2.5488 | 2.5210 | 2.4922 | 2.4624 | 2.4324 | 2.4014 | 2.3692 | 2.3362 | 2.3020 | 2.2672 | 2.2316 | |
| -.500 | 2.6902 | 2.6658 | 2.6400 | 2.6144 | 2.5878 | 2.5604 | 2.5322 | 2.5032 | 2.4736 | 2.4432 | 2.4118 | 2.3794 | 2.3462 | 2.3120 | |
| -.600 | 2.7504 | 2.7268 | 2.7024 | 2.6778 | 2.6526 | 2.6260 | 2.5992 | 2.5718 | 2.5434 | 2.5144 | 2.4844 | 2.4532 | 2.4220 | 2.3896 | |
| -.700 | 2.8090 | 2.7864 | 2.7628 | 2.7394 | 2.7152 | 2.6902 | 2.6642 | 2.6380 | 2.6108 | 2.5830 | 2.5544 | 2.5250 | 2.4948 | 2.4640 | |
| -.800 | 2.8660 | 2.8442 | 2.8216 | 2.7994 | 2.7760 | 2.7520 | 2.7274 | 2.7020 | 2.6762 | 2.6496 | 2.6222 | 2.5942 | 2.5654 | 2.5362 | |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0.800 | 0.4062 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 0.7540 | 0.6070 | 0.4078 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 0.9844 | 0.8786 | 0.7568 | 0.6092 | 0.4094 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.1688 | 1.0828 | 0.9882 | 0.8822 | 0.7598 | 0.6116 | 0.4110 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.3268 | 1.2528 | 1.1734 | 1.0870 | 0.9920 | 0.8856 | 0.7626 | 0.6140 | 0.4124 | ----- | ----- | ----- | ----- | ----- |
| .300 | 1.4670 | 1.4016 | 1.3322 | 1.2580 | 1.1782 | 1.0914 | 0.9960 | 0.8890 | 0.7656 | 0.6162 | 0.4140 | ----- | ----- | ----- |
| .250 | 1.5318 | 1.4698 | 1.4044 | 1.3348 | 1.2604 | 1.1804 | 1.0934 | 0.9978 | 0.8906 | 0.7670 | 0.6174 | 0.4148 | ----- | ----- |
| .200 | 1.5940 | 1.5348 | 1.4728 | 1.4072 | 1.3374 | 1.2628 | 1.1826 | 1.0956 | 0.9998 | 0.8924 | 0.7684 | 0.6186 | 0.4156 | |
| .150 | 1.6534 | 1.5972 | 1.5380 | 1.4756 | 1.4100 | 1.3400 | 1.2654 | 1.1850 | 1.0976 | 1.0016 | 0.8940 | 0.7698 | 0.6196 | |
| .100 | 1.7106 | 1.6568 | 1.6004 | 1.5412 | 1.4788 | 1.4126 | 1.3426 | 1.2678 | 1.1872 | 1.0998 | 1.0034 | 0.8956 | 0.7712 | |
| .075 | 1.7384 | 1.6858 | 1.6306 | 1.5726 | 1.5120 | 1.4476 | 1.3796 | 1.3072 | 1.2294 | 1.1456 | 1.0538 | 0.9520 | 0.8368 | |
| .050 | 1.7660 | 1.7142 | 1.6600 | 1.6034 | 1.5442 | 1.4816 | 1.4154 | 1.3452 | 1.2704 | 1.1894 | 1.1018 | 1.0054 | 0.8972 | |
| .025 | 1.7928 | 1.7418 | 1.6892 | 1.6338 | 1.5760 | 1.5148 | 1.4506 | 1.3822 | 1.3096 | 1.2320 | 1.1478 | 1.0558 | 0.9538 | |
| 0 | 1.8192 | 1.7696 | 1.7176 | 1.6634 | 1.6068 | 1.5472 | 1.4814 | 1.4182 | 1.3480 | 1.2728 | 1.1916 | 1.1040 | 1.0072 | |
| -.025 | 1.8452 | 1.7964 | 1.7456 | 1.6924 | 1.6372 | 1.5788 | 1.5176 | 1.4534 | 1.3848 | 1.3122 | 1.2342 | 1.1498 | 1.0578 | |
| -.050 | 1.8708 | 1.8228 | 1.7730 | 1.7210 | 1.6668 | 1.6098 | 1.5502 | 1.4874 | 1.4210 | 1.3504 | 1.2750 | 1.1938 | 1.1060 | |
| -.075 | 1.8960 | 1.8490 | 1.8000 | 1.7490 | 1.6958 | 1.6404 | 1.5820 | 1.5208 | 1.4560 | 1.3876 | 1.3146 | 1.2364 | 1.1522 | |
| -.100 | 1.9210 | 1.8746 | 1.8266 | 1.7766 | 1.7244 | 1.6700 | 1.6130 | 1.5532 | 1.4902 | 1.4236 | 1.3530 | 1.2774 | 1.1962 | |
| -.150 | 1.9696 | 1.9246 | 1.8784 | 1.8304 | 1.7802 | 1.7278 | 1.6732 | 1.6162 | 1.5564 | 1.4932 | 1.4266 | 1.3556 | 1.2798 | |
| -.200 | 2.0162 | 1.9734 | 1.9286 | 1.8822 | 1.8340 | 1.7836 | 1.7312 | 1.6766 | 1.6194 | 1.5592 | 1.4960 | 1.4292 | 1.3582 | |
| -.250 | 2.0628 | 2.0208 | 1.9774 | 1.9326 | 1.8862 | 1.8376 | 1.7872 | 1.7348 | 1.6800 | 1.6224 | 1.5624 | 1.4988 | 1.4318 | |
| -.300 | 2.1076 | 2.0670 | 2.0250 | 1.9814 | 1.9368 | 1.8896 | 1.8410 | 1.7906 | 1.7380 | 1.6830 | 1.6256 | 1.5652 | 1.5018 | |
| -.400 | 2.1940 | 2.1460 | 2.1164 | 2.0754 | 2.0334 | 1.9896 | 1.9442 | 1.8974 | 1.8484 | 1.7978 | 1.7448 | 1.6896 | 1.6318 | |
| -.500 | 2.2770 | 2.2406 | 2.2032 | 2.1646 | 2.1250 | 2.0838 | 2.0414 | 1.9976 | 1.9520 | 1.9046 | 1.8558 | 1.8046 | 1.7516 | |
| -.600 | 2.3562 | 2.3218 | 2.2862 | 2.2498 | 2.2124 | 2.1734 | 2.1334 | 2.0922 | 2.0494 | 2.0052 | 1.9594 | 1.9120 | 1.8628 | |
| -.700 | 2.4324 | 2.3998 | 2.3660 | 2.3314 | 2.2958 | 2.2590 | 2.2212 | 2.1824 | 2.1420 | 2.1004 | 2.0572 | 2.0132 | 1.9672 | |
| -.800 | 2.5058 | 2.4744 | 2.4424 | 2.4096 | 2.3760 | 2.3408 | 2.3050 | 2.2682 | 2.2300 | 2.1908 | 2.1504 | 2.1086 | 2.0654 | |

TABLE II - Continued

$$\text{VALUES OF } 2 \left(\frac{\rho_1}{\rho_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.45]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6562 | 1.6068 | 1.5516 | 1.5000 | 1.4420 | 1.3806 | 1.3152 | 1.2452 | 1.1696 | 1.0874 | 0.9970 | 0.8960 | 0.7798 | 0.6408 |
| .700 | 1.7586 | 1.7128 | 1.6658 | 1.6158 | 1.5634 | 1.5082 | 1.4500 | 1.3882 | 1.3222 | 1.2518 | 1.1758 | 1.0932 | 1.0022 | .9006 |
| .600 | 1.8536 | 1.8124 | 1.7688 | 1.7230 | 1.6750 | 1.6250 | 1.5722 | 1.5166 | 1.4578 | 1.3956 | 1.3292 | 1.2582 | 1.1820 | 1.0988 |
| .500 | 1.9446 | 1.9058 | 1.8652 | 1.8228 | 1.7786 | 1.7326 | 1.6842 | 1.6338 | 1.5806 | 1.5248 | 1.4654 | 1.4026 | 1.3362 | 1.2646 |
| .400 | 2.0300 | 1.9934 | 1.9550 | 1.9166 | 1.8756 | 1.8330 | 1.7886 | 1.7422 | 1.6936 | 1.6424 | 1.5890 | 1.5326 | 1.4732 | 1.4100 |
| .300 | 2.1112 | 2.0772 | 2.0420 | 2.0052 | 1.9670 | 1.9274 | 1.8862 | 1.8432 | 1.7984 | 1.7516 | 1.7026 | 1.6514 | 1.5976 | 1.5404 |
| .250 | 2.1506 | 2.1174 | 2.0834 | 2.0478 | 2.0110 | 1.9726 | 1.9328 | 1.8916 | 1.8482 | 1.8032 | 1.7562 | 1.7070 | 1.6558 | 1.6014 |
| .200 | 2.1890 | 2.1568 | 2.1240 | 2.0894 | 2.0536 | 2.0166 | 1.9782 | 1.9384 | 1.8966 | 1.8534 | 1.8080 | 1.7608 | 1.7116 | 1.6598 |
| .150 | 2.2268 | 2.1958 | 2.1632 | 2.1300 | 2.0952 | 2.0594 | 2.0224 | 1.9838 | 1.9434 | 1.9018 | 1.8582 | 1.8130 | 1.7658 | 1.7160 |
| .100 | 2.2632 | 2.2330 | 2.2018 | 2.1694 | 2.1360 | 2.1016 | 2.0654 | 2.0282 | 1.9890 | 1.9490 | 1.9068 | 1.8632 | 1.8178 | 1.7702 |
| .075 | 2.2814 | 2.2514 | 2.2208 | 2.1890 | 2.1560 | 2.1218 | 2.0864 | 2.0498 | 2.0114 | 1.9718 | 1.9306 | 1.8878 | 1.8434 | 1.7966 |
| .050 | 2.2988 | 2.2698 | 2.2396 | 2.2084 | 2.1758 | 2.1420 | 2.1072 | 2.0712 | 2.0336 | 1.9946 | 1.9540 | 1.9120 | 1.8684 | 1.8224 |
| .025 | 2.3170 | 2.2880 | 2.2584 | 2.2274 | 2.1954 | 2.1622 | 2.1282 | 2.0924 | 2.0552 | 2.0172 | 1.9772 | 1.9358 | 1.8930 | 1.8480 |
| 0 | 2.3346 | 2.3060 | 2.2768 | 2.2462 | 2.2146 | 2.1822 | 2.1482 | 2.1130 | 2.0768 | 2.0392 | 2.0002 | 1.9592 | 1.9172 | 1.8730 |
| -.025 | 2.3520 | 2.3238 | 2.2950 | 2.2648 | 2.2336 | 2.2016 | 2.1684 | 2.1338 | 2.0980 | 2.0610 | 2.0226 | 1.9826 | 1.9412 | 1.8978 |
| -.050 | 2.3692 | 2.3414 | 2.3130 | 2.2834 | 2.2526 | 2.2210 | 2.1882 | 2.1544 | 2.1190 | 2.0826 | 2.0448 | 2.0052 | 1.9646 | 1.9222 |
| -.075 | 2.3862 | 2.3588 | 2.3308 | 2.3016 | 2.2714 | 2.2402 | 2.2078 | 2.1746 | 2.1396 | 2.1030 | 2.0666 | 2.0278 | 1.9878 | 1.9460 |
| -.100 | 2.4032 | 2.3760 | 2.3484 | 2.3196 | 2.2900 | 2.2592 | 2.2274 | 2.1944 | 2.1602 | 2.1248 | 2.0882 | 2.0504 | 2.0108 | 1.9696 |
| -.150 | 2.4364 | 2.4102 | 2.3832 | 2.3552 | 2.3264 | 2.2964 | 2.2658 | 2.2330 | 2.2004 | 2.1662 | 2.1306 | 2.0938 | 2.0558 | 2.0160 |
| -.200 | 2.4692 | 2.4436 | 2.4174 | 2.3902 | 2.3624 | 2.3332 | 2.3030 | 2.2722 | 2.2398 | 2.2068 | 2.1722 | 2.1366 | 2.0996 | 2.0610 |
| -.250 | 2.5012 | 2.4766 | 2.4510 | 2.4244 | 2.3972 | 2.3690 | 2.3396 | 2.3100 | 2.2784 | 2.2462 | 2.2126 | 2.1780 | 2.1422 | 2.1050 |
| -.300 | 2.5328 | 2.5088 | 2.4840 | 2.4582 | 2.4316 | 2.4042 | 2.3758 | 2.3464 | 2.3160 | 2.2848 | 2.2522 | 2.2186 | 2.1840 | 2.1478 |
| -.400 | 2.5940 | 2.5716 | 2.5484 | 2.5240 | 2.4988 | 2.4726 | 2.4458 | 2.4180 | 2.3892 | 2.3596 | 2.3292 | 2.2974 | 2.2646 | 2.2306 |
| -.500 | 2.6546 | 2.6328 | 2.6104 | 2.5874 | 2.5634 | 2.5386 | 2.5134 | 2.4870 | 2.4596 | 2.4318 | 2.4024 | 2.3728 | 2.3416 | 2.3098 |
| -.600 | 2.7124 | 2.6918 | 2.6708 | 2.6486 | 2.6260 | 2.6026 | 2.5784 | 2.5536 | 2.5274 | 2.5012 | 2.4734 | 2.4450 | 2.4160 | 2.3856 |
| -.700 | 2.7686 | 2.7490 | 2.7292 | 2.7086 | 2.6866 | 2.6642 | 2.6412 | 2.6178 | 2.5934 | 2.5680 | 2.5418 | 2.5148 | 2.4874 | 2.4580 |
| -.800 | 2.8234 | 2.8046 | 2.7860 | 2.7660 | 2.7454 | 2.7244 | 2.7026 | 2.6800 | 2.6568 | 2.6330 | 2.6078 | 2.5822 | 2.5562 | 2.5288 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4584 | 0.4834 | 0.5084 | 0.5334 | 0.5584 | 0.5834 | 0.6084 | 0.6334 | 0.6584 | 0.6834 | 0.7084 | 0.7334 | 0.7584 |
| .700 | 0.7836 | 0.8142 | 0.8448 | 0.8754 | 0.9060 | 0.9366 | 0.9672 | 0.9978 | 1.0284 | 1.0590 | 1.0896 | 1.1202 | 1.1508 |
| .600 | 1.0072 | 1.0428 | 1.0784 | 1.1140 | 1.1496 | 1.1852 | 1.2208 | 1.2564 | 1.2920 | 1.3276 | 1.3632 | 1.3988 | 1.4344 |
| .500 | 1.1878 | 1.2284 | 1.2690 | 1.3096 | 1.3502 | 1.3908 | 1.4314 | 1.4720 | 1.5126 | 1.5532 | 1.5938 | 1.6344 | 1.6750 |
| .400 | 1.3428 | 1.3884 | 1.4340 | 1.4796 | 1.5252 | 1.5708 | 1.6164 | 1.6620 | 1.7076 | 1.7532 | 1.7988 | 1.8444 | 1.8900 |
| .300 | 1.4806 | 1.5312 | 1.5818 | 1.6324 | 1.6830 | 1.7336 | 1.7842 | 1.8348 | 1.8854 | 1.9360 | 1.9866 | 2.0372 | 2.0878 |
| .250 | 1.5444 | 1.6000 | 1.6556 | 1.7112 | 1.7668 | 1.8224 | 1.8780 | 1.9336 | 1.9892 | 2.0448 | 2.1004 | 2.1560 | 2.2116 |
| .200 | 1.6056 | 1.6664 | 1.7272 | 1.7880 | 1.8488 | 1.9096 | 1.9704 | 2.0312 | 2.0920 | 2.1528 | 2.2136 | 2.2744 | 2.3352 |
| .150 | 1.6640 | 1.7296 | 1.7952 | 1.8608 | 1.9264 | 1.9920 | 2.0576 | 2.1232 | 2.1888 | 2.2544 | 2.3200 | 2.3856 | 2.4512 |
| .100 | 1.7204 | 1.7912 | 1.8620 | 1.9328 | 2.0036 | 2.0744 | 2.1452 | 2.2160 | 2.2868 | 2.3576 | 2.4284 | 2.4992 | 2.5700 |
| .075 | 1.7480 | 1.8240 | 1.9000 | 1.9760 | 2.0520 | 2.1280 | 2.2040 | 2.2800 | 2.3560 | 2.4320 | 2.5080 | 2.5840 | 2.6600 |
| .050 | 1.7746 | 1.8544 | 1.9342 | 2.0140 | 2.0938 | 2.1736 | 2.2534 | 2.3332 | 2.4130 | 2.4928 | 2.5726 | 2.6524 | 2.7322 |
| .025 | 1.8012 | 1.8840 | 1.9678 | 2.0516 | 2.1354 | 2.2192 | 2.3030 | 2.3868 | 2.4706 | 2.5544 | 2.6382 | 2.7220 | 2.8058 |
| 0 | 1.8270 | 1.9136 | 1.9992 | 2.0848 | 2.1704 | 2.2560 | 2.3416 | 2.4272 | 2.5128 | 2.5984 | 2.6840 | 2.7696 | 2.8552 |
| -.025 | 1.8528 | 1.9424 | 2.0320 | 2.1216 | 2.2112 | 2.3008 | 2.3904 | 2.4800 | 2.5696 | 2.6592 | 2.7488 | 2.8384 | 2.9280 |
| -.050 | 1.8778 | 1.9704 | 2.0630 | 2.1556 | 2.2482 | 2.3408 | 2.4334 | 2.5260 | 2.6186 | 2.7112 | 2.8038 | 2.8964 | 2.9890 |
| -.075 | 1.9028 | 1.9984 | 2.0940 | 2.1896 | 2.2852 | 2.3808 | 2.4764 | 2.5720 | 2.6676 | 2.7632 | 2.8588 | 2.9544 | 3.0500 |
| -.100 | 1.9270 | 2.0256 | 2.1242 | 2.2228 | 2.3214 | 2.4200 | 2.5186 | 2.6172 | 2.7158 | 2.8144 | 2.9130 | 3.0116 | 3.1102 |
| -.150 | 1.9750 | 2.0766 | 2.1782 | 2.2798 | 2.3814 | 2.4830 | 2.5846 | 2.6862 | 2.7878 | 2.8894 | 2.9910 | 3.0926 | 3.1942 |
| -.200 | 2.0212 | 2.1248 | 2.2284 | 2.3320 | 2.4356 | 2.5392 | 2.6428 | 2.7464 | 2.8500 | 2.9536 | 3.0572 | 3.1608 | 3.2644 |
| -.250 | 2.0664 | 2.1720 | 2.2776 | 2.3832 | 2.4888 | 2.5944 | 2.6990 | 2.8046 | 2.9102 | 3.0158 | 3.1214 | 3.2270 | 3.3326 |
| -.300 | 2.1104 | 2.2180 | 2.3256 | 2.4332 | 2.5408 | 2.6484 | 2.7560 | 2.8636 | 2.9712 | 3.0788 | 3.1864 | 3.2940 | 3.4016 |
| -.400 | 2.1556 | 2.2652 | 2.3748 | 2.4844 | 2.5940 | 2.7036 | 2.8132 | 2.9228 | 3.0324 | 3.1420 | 3.2516 | 3.3612 | 3.4708 |
| -.500 | 2.2766 | 2.3882 | 2.4998 | 2.6114 | 2.7230 | 2.8346 | 2.9462 | 3.0578 | 3.1694 | 3.2810 | 3.3926 | 3.5042 | 3.6158 |
| -.600 | 2.3542 | 2.4678 | 2.5814 | 2.6950 | 2.8086 | 2.9222 | 3.0358 | 3.1494 | 3.2630 | 3.3766 | 3.4902 | 3.6038 | 3.7174 |
| -.700 | 2.4288 | 2.5444 | 2.6590 | 2.7736 | 2.8882 | 3.0028 | 3.1174 | 3.2320 | 3.3466 | 3.4612 | 3.5758 | 3.6904 | 3.8050 |
| -.800 | 2.5006 | 2.6172 | 2.7338 | 2.8504 | 2.9670 | 3.0836 | 3.2002 | 3.3168 | 3.4334 | 3.5500 | 3.6666 | 3.7832 | 3.8998 |

TABLE II - Continued

VALUES OF $2 \left(\frac{P_1}{P_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_o = 0.50$]

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 1.6504 | 1.6040 | 1.5546 | 1.5026 | 1.4474 | 1.3884 | 1.3258 | 1.2584 | 1.1856 | 1.1066 | 1.0194 | 0.9222 | 0.8110 | 0.6796 | |
| .700 | 1.7498 | 1.7072 | 1.6626 | 1.6154 | 1.5658 | 1.5130 | 1.4574 | 1.3978 | 1.3348 | 1.2668 | 1.1934 | 1.1136 | 1.0260 | .9280 | |
| .600 | 1.8430 | 1.8038 | 1.7626 | 1.7198 | 1.6744 | 1.6268 | 1.5766 | 1.5232 | 1.4670 | 1.4072 | 1.3434 | 1.2750 | 1.2010 | 1.1208 | |
| .500 | 1.9302 | 1.8942 | 1.8564 | 1.8168 | 1.7752 | 1.7318 | 1.6860 | 1.6380 | 1.5872 | 1.5336 | 1.4768 | 1.4164 | 1.3522 | 1.2830 | |
| .400 | 2.0130 | 1.9796 | 1.9446 | 1.9080 | 1.8700 | 1.8298 | 1.7878 | 1.7438 | 1.6976 | 1.6490 | 1.5978 | 1.5436 | 1.4864 | 1.4258 | |
| .300 | 2.0916 | 2.0606 | 2.0280 | 1.9940 | 1.9586 | 1.9216 | 1.8832 | 1.8424 | 1.8000 | 1.7556 | 1.7090 | 1.6600 | 1.6082 | 1.5538 | |
| .250 | 2.1296 | 2.0996 | 2.0682 | 2.0356 | 2.0012 | 1.9656 | 1.9286 | 1.8896 | 1.8488 | 1.8062 | 1.7614 | 1.7144 | 1.6652 | 1.6132 | |
| .200 | 2.1666 | 2.1376 | 2.1072 | 2.0758 | 2.0428 | 2.0082 | 1.9726 | 1.9352 | 1.8962 | 1.8552 | 1.8122 | 1.7672 | 1.7202 | 1.6706 | |
| .150 | 2.2030 | 2.1748 | 2.1456 | 2.1152 | 2.0842 | 2.0504 | 2.0156 | 1.9796 | 1.9418 | 1.9026 | 1.8614 | 1.8182 | 1.7732 | 1.7260 | |
| .100 | 2.2384 | 2.2112 | 2.1830 | 2.1536 | 2.1228 | 2.0910 | 2.0576 | 2.0228 | 1.9864 | 1.9484 | 1.9090 | 1.8676 | 1.8242 | 1.7788 | |
| .075 | 2.2558 | 2.2292 | 2.2014 | 2.1726 | 2.1422 | 2.1108 | 2.0780 | 2.0438 | 2.0082 | 1.9710 | 1.9322 | 1.8916 | 1.8492 | 1.8048 | |
| .050 | 2.2730 | 2.2468 | 2.2194 | 2.1910 | 2.1614 | 2.1306 | 2.0982 | 2.0648 | 2.0298 | 1.9932 | 1.9550 | 1.9154 | 1.8738 | 1.8302 | |
| .025 | 2.2900 | 2.2644 | 2.2374 | 2.2094 | 2.1804 | 2.1500 | 2.1186 | 2.0856 | 2.0514 | 2.0150 | 1.9776 | 1.9386 | 1.8978 | 1.8552 | |
| 0 | 2.3068 | 2.2818 | 2.2552 | 2.2278 | 2.1990 | 2.1692 | 2.1384 | 2.1058 | 2.0720 | 2.0368 | 2.0000 | 1.9616 | 1.9218 | 1.8800 | |
| -.025 | 2.3236 | 2.2990 | 2.2728 | 2.2460 | 2.2174 | 2.1874 | 2.1558 | 2.1228 | 2.0892 | 2.0540 | 2.0176 | 1.9800 | 1.9414 | 1.9000 | |
| -.050 | 2.3396 | 2.3160 | 2.2904 | 2.2638 | 2.2358 | 2.2072 | 2.1770 | 2.1460 | 2.1132 | 2.0798 | 2.0450 | 2.0088 | 1.9714 | 1.9320 | |
| -.075 | 2.3558 | 2.3326 | 2.3076 | 2.2814 | 2.2540 | 2.2258 | 2.1962 | 2.1654 | 2.1332 | 2.0998 | 2.0650 | 2.0288 | 1.9908 | 1.9516 | |
| -.100 | 2.3730 | 2.3494 | 2.3246 | 2.2990 | 2.2720 | 2.2440 | 2.2152 | 2.1844 | 2.1532 | 2.1204 | 2.0862 | 2.0506 | 2.0134 | 1.9748 | |
| -.150 | 2.4052 | 2.3822 | 2.3584 | 2.3334 | 2.3072 | 2.2802 | 2.2524 | 2.2230 | 2.1924 | 2.1608 | 2.1278 | 2.0932 | 2.0574 | 2.0200 | |
| -.200 | 2.4366 | 2.4146 | 2.3912 | 2.3672 | 2.3420 | 2.3160 | 2.2888 | 2.2604 | 2.2306 | 2.1998 | 2.1682 | 2.1348 | 2.1002 | 2.0642 | |
| -.250 | 2.4678 | 2.4462 | 2.4238 | 2.4004 | 2.3760 | 2.3508 | 2.3244 | 2.2968 | 2.2682 | 2.2386 | 2.2076 | 2.1756 | 2.1420 | 2.1072 | |
| -.300 | 2.4978 | 2.4772 | 2.4554 | 2.4328 | 2.4092 | 2.3848 | 2.3592 | 2.3326 | 2.3048 | 2.2762 | 2.2466 | 2.2152 | 2.1828 | 2.1494 | |
| -.400 | 2.5574 | 2.5378 | 2.5174 | 2.4962 | 2.4740 | 2.4510 | 2.4270 | 2.4020 | 2.3762 | 2.3492 | 2.3212 | 2.2918 | 2.2616 | 2.2304 | |
| -.500 | 2.6146 | 2.5964 | 2.5770 | 2.5574 | 2.5366 | 2.5150 | 2.4924 | 2.4690 | 2.4446 | 2.4194 | 2.3928 | 2.3656 | 2.3370 | 2.3074 | |
| -.600 | 2.6702 | 2.6534 | 2.6352 | 2.6164 | 2.5970 | 2.5766 | 2.5554 | 2.5334 | 2.5104 | 2.4866 | 2.4620 | 2.4362 | 2.4092 | 2.3818 | |
| -.700 | 2.7242 | 2.7082 | 2.6912 | 2.6738 | 2.6554 | 2.6364 | 2.6164 | 2.5956 | 2.5740 | 2.5516 | 2.5284 | 2.5042 | 2.4788 | 2.4528 | |
| -.800 | 2.7766 | 2.7618 | 2.7456 | 2.7294 | 2.7120 | 2.6942 | 2.6754 | 2.6560 | 2.6356 | 2.6146 | 2.5926 | 2.5696 | 2.5458 | 2.5212 | |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5116 | 0.2410 | 0.1144 | 0.2126 | 0.1144 | 0.2126 | 0.1144 | 0.2126 | 0.1144 | 0.2126 | 0.1144 | 0.2126 | 0.1144 | 0.2126 |
| .700 | .8162 | .6836 | .5114 | .6836 | .5114 | .6836 | .5114 | .6836 | .5114 | .6836 | .5114 | .6836 | .5114 | .6836 |
| .600 | 1.0326 | .9338 | .8210 | .6876 | .8210 | .6876 | .8210 | .6876 | .8210 | .6876 | .8210 | .6876 | .8210 | .6876 |
| .500 | 1.2088 | 1.1276 | 1.0386 | .9394 | .8259 | .6918 | .5206 | .2444 | .6956 | .5236 | .2468 | .6996 | .5262 | .2480 |
| .400 | 1.3608 | 1.2912 | 1.2162 | 1.1344 | 1.0448 | .9450 | .8308 | .6956 | .5236 | .2468 | .6996 | .5262 | .2480 | .6836 |
| .300 | 1.4960 | 1.4346 | 1.3692 | 1.2992 | 1.2236 | 1.1414 | 1.0512 | .9506 | .8356 | .6996 | .5262 | .2480 | .6836 | .5292 |
| .250 | 1.5588 | 1.5006 | 1.4390 | 1.3734 | 1.3028 | 1.2272 | 1.1448 | 1.0542 | .9532 | .8380 | .7016 | .5280 | .6836 | .5292 |
| .200 | 1.6188 | 1.5636 | 1.5052 | 1.4434 | 1.3774 | 1.3070 | 1.2308 | 1.1482 | 1.0572 | .9558 | .8404 | .7034 | .5292 | .6836 |
| .150 | 1.6762 | 1.6236 | 1.5684 | 1.5100 | 1.4476 | 1.3818 | 1.3108 | 1.2342 | 1.1514 | 1.0598 | .9588 | .8426 | .7054 | .5292 |
| .100 | 1.7316 | 1.6812 | 1.6286 | 1.5734 | 1.5144 | 1.4522 | 1.3858 | 1.3146 | 1.2380 | 1.1548 | 1.0634 | .9614 | .8448 | .7054 |
| .075 | 1.7586 | 1.7094 | 1.6580 | 1.6040 | 1.5466 | 1.4862 | 1.4218 | 1.3530 | 1.2790 | 1.1990 | 1.1118 | 1.0154 | .9062 | .7054 |
| .050 | 1.7848 | 1.7368 | 1.6866 | 1.6342 | 1.5780 | 1.5192 | 1.4566 | 1.3900 | 1.3186 | 1.2410 | 1.1580 | 1.0662 | .9638 | .7054 |
| .025 | 1.8110 | 1.7640 | 1.7146 | 1.6632 | 1.6088 | 1.5516 | 1.4906 | 1.4258 | 1.3570 | 1.2828 | 1.2024 | 1.1150 | 1.0178 | .7054 |
| 0 | 1.8364 | 1.7904 | 1.7422 | 1.6920 | 1.6388 | 1.5830 | 1.5238 | 1.4610 | 1.3940 | 1.3222 | 1.2452 | 1.1614 | 1.0688 | .7054 |
| -.025 | 1.8614 | 1.8164 | 1.7694 | 1.7202 | 1.6682 | 1.6138 | 1.5560 | 1.4952 | 1.4300 | 1.3610 | 1.2864 | 1.2060 | 1.1176 | .7054 |
| -.050 | 1.8862 | 1.8422 | 1.7960 | 1.7480 | 1.6970 | 1.6440 | 1.5876 | 1.5284 | 1.4654 | 1.3982 | 1.3262 | 1.2488 | 1.1642 | .7054 |
| -.075 | 1.9106 | 1.8674 | 1.8222 | 1.7750 | 1.7252 | 1.6736 | 1.6186 | 1.5608 | 1.4996 | 1.4344 | 1.3648 | 1.2902 | 1.2088 | .7054 |
| -.100 | 1.9346 | 1.8920 | 1.8478 | 1.8018 | 1.7532 | 1.7024 | 1.6488 | 1.5924 | 1.5326 | 1.4694 | 1.4022 | 1.3300 | 1.2518 | .7054 |
| -.150 | 1.9814 | 1.9406 | 1.8980 | 1.8538 | 1.8070 | 1.7588 | 1.7076 | 1.6538 | 1.5972 | 1.5372 | 1.4738 | 1.4062 | 1.3320 | .7054 |
| -.200 | 2.0270 | 1.9876 | 1.9468 | 1.9040 | 1.8594 | 1.8130 | 1.7640 | 1.7128 | 1.6588 | 1.6018 | 1.5416 | 1.4780 | 1.4096 | .7054 |
| -.250 | 2.0714 | 2.0332 | 1.9938 | 1.9530 | 1.9098 | 1.8654 | 1.8184 | 1.7694 | 1.7178 | 1.6636 | 1.6066 | 1.5462 | 1.4816 | .7054 |
| -.300 | 2.1146 | 2.0780 | 2.0396 | 2.0004 | 1.9590 | 1.9160 | 1.8710 | 1.8238 | 1.7746 | 1.7228 | 1.6686 | 1.6112 | 1.5500 | .7054 |
| -.400 | 2.1980 | 2.1634 | 2.1278 | 2.0912 | 2.0526 | 2.0130 | 1.9714 | 1.9278 | 1.8824 | 1.8348 | 1.7852 | 1.7328 | 1.6774 | .7054 |
| -.500 | 2.2772 | 2.2448 | 2.2118 | 2.1774 | 2.1416 | 2.1046 | 2.0656 | 2.0252 | 1.9834 | 1.9394 | 1.8934 | 1.8456 | 1.7948 | .7054 |
| -.600 | 2.3530 | 2.3228 | 2.2918 | 2.2598 | 2.2260 | 2.1914 | 2.1552 | 2.1174 | 2.0782 | 2.0376 | 1.9952 | 1.9508 | 1.9040 | .7054 |
| -.700 | 2.4260 | 2.3976 | 2.3684 | 2.3382 | 2.3066 | 2.2742 | 2.2402 | 2.2050 | 2.1684 | 2.1304 | 2.0908 | 2.0496 | 2.0064 | .7054 |
| -.800 | 2.4960 | 2.4692 | 2.4420 | 2.4136 | 2.3838 | 2.3532 | 2.3212 | 2.2884 | 2.2542 | 2.2184 | 2.1816 | 2.1432 | 2.1026 | .7054 |

TABLE II - Continued

VALUES OF $2 \left(\frac{P_1}{P_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued $[M_o = 0.55]$

| $\frac{P_1}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6436 | 1.6002 | 1.5540 | 1.5048 | 1.4526 | 1.3966 | 1.3370 | 1.2728 | 1.2030 | 1.1274 | 1.0436 | 0.9504 | 0.8442 | 0.7202 |
| .700 | 1.7396 | 1.7002 | 1.6586 | 1.6142 | 1.5674 | 1.5178 | 1.4676 | 1.4086 | 1.3480 | 1.2830 | 1.2126 | 1.1362 | 1.0516 | .9576 |
| .600 | 1.8294 | 1.7936 | 1.7558 | 1.7152 | 1.6730 | 1.6286 | 1.5808 | 1.5306 | 1.4770 | 1.4200 | 1.3588 | 1.2930 | 1.2220 | 1.1444 |
| .500 | 1.9138 | 1.8810 | 1.8506 | 1.8098 | 1.7712 | 1.7306 | 1.6876 | 1.6424 | 1.5942 | 1.5432 | 1.4890 | 1.4314 | 1.3694 | 1.3030 |
| .400 | 1.9936 | 1.9626 | 1.9316 | 1.8984 | 1.8628 | 1.8258 | 1.7866 | 1.7454 | 1.7018 | 1.6558 | 1.6072 | 1.5556 | 1.5004 | 1.4424 |
| .300 | 2.0696 | 2.0418 | 2.0126 | 1.9822 | 1.9492 | 1.9152 | 1.8792 | 1.8416 | 1.8018 | 1.7598 | 1.7158 | 1.6694 | 1.6200 | 1.5678 |
| .250 | 2.1058 | 2.0794 | 2.0512 | 2.0216 | 1.9904 | 1.9576 | 1.9236 | 1.8874 | 1.8494 | 1.8092 | 1.7672 | 1.7230 | 1.6758 | 1.6264 |
| .200 | 2.1416 | 2.1160 | 2.0892 | 2.0610 | 2.0308 | 1.9994 | 1.9664 | 1.9320 | 1.8952 | 1.8570 | 1.8168 | 1.7746 | 1.7296 | 1.6824 |
| .150 | 2.1764 | 2.1520 | 2.1260 | 2.0986 | 2.0698 | 2.0398 | 2.0082 | 1.9750 | 1.9400 | 1.9032 | 1.8648 | 1.8244 | 1.7814 | 1.7364 |
| .100 | 2.2104 | 2.1868 | 2.1618 | 2.1360 | 2.1082 | 2.0792 | 2.0490 | 2.0166 | 1.9832 | 1.9482 | 1.9112 | 1.8722 | 1.8316 | 1.7884 |
| .075 | 2.2272 | 2.2040 | 2.1798 | 2.1540 | 2.1268 | 2.0984 | 2.0688 | 2.0376 | 1.9946 | 1.9700 | 1.9340 | 1.8960 | 1.8558 | 1.8136 |
| .050 | 2.2436 | 2.2212 | 2.1970 | 2.1720 | 2.1454 | 2.1178 | 2.0882 | 2.0578 | 2.0254 | 1.9916 | 1.9562 | 1.9190 | 1.8800 | 1.8388 |
| .025 | 2.2604 | 2.2380 | 2.2146 | 2.1898 | 2.1638 | 2.1366 | 2.1078 | 2.0778 | 2.0462 | 2.0130 | 1.9782 | 1.9420 | 1.9036 | 1.8634 |
| 0 | 2.2766 | 2.2546 | 2.2316 | 2.2076 | 2.1816 | 2.1552 | 2.1272 | 2.0976 | 2.0666 | 2.0342 | 2.0000 | 1.9644 | 1.9268 | 1.8874 |
| -.025 | 2.2924 | 2.2712 | 2.2486 | 2.2248 | 2.1998 | 2.1736 | 2.1460 | 2.1172 | 2.0866 | 2.0550 | 2.0214 | 1.9866 | 1.9498 | 1.9110 |
| -.050 | 2.3084 | 2.2876 | 2.2654 | 2.2422 | 2.2176 | 2.1918 | 2.1652 | 2.1366 | 2.1066 | 2.0752 | 2.0426 | 2.0084 | 1.9722 | 1.9346 |
| -.075 | 2.3240 | 2.3036 | 2.2820 | 2.2590 | 2.2350 | 2.2094 | 2.1832 | 2.1558 | 2.1264 | 2.0956 | 2.0634 | 2.0298 | 1.9944 | 1.9574 |
| -.100 | 2.3400 | 2.3198 | 2.2984 | 2.2760 | 2.2524 | 2.2276 | 2.2016 | 2.1744 | 2.1456 | 2.1158 | 2.0840 | 2.0514 | 2.0164 | 1.9802 |
| -.150 | 2.3706 | 2.3512 | 2.3308 | 2.3092 | 2.2862 | 2.2628 | 2.2378 | 2.2116 | 2.1836 | 2.1548 | 2.1246 | 2.0930 | 2.0596 | 2.0246 |
| -.200 | 2.4010 | 2.3824 | 2.3626 | 2.3418 | 2.3198 | 2.2970 | 2.2728 | 2.2478 | 2.2210 | 2.1932 | 2.1640 | 2.1334 | 2.1012 | 2.0678 |
| -.250 | 2.4304 | 2.4126 | 2.3938 | 2.3738 | 2.3528 | 2.3306 | 2.3074 | 2.2832 | 2.2574 | 2.2304 | 2.2026 | 2.1732 | 2.1422 | 2.1098 |
| -.300 | 2.4594 | 2.4426 | 2.4252 | 2.4050 | 2.3848 | 2.3638 | 2.3412 | 2.3178 | 2.2930 | 2.2670 | 2.2398 | 2.2120 | 2.1834 | 2.1508 |
| -.400 | 2.5164 | 2.5006 | 2.4834 | 2.4662 | 2.4470 | 2.4274 | 2.4068 | 2.3848 | 2.3622 | 2.3380 | 2.3128 | 2.2866 | 2.2588 | 2.2302 |
| -.500 | 2.5712 | 2.5568 | 2.5410 | 2.5246 | 2.5074 | 2.4890 | 2.4698 | 2.4498 | 2.4280 | 2.4060 | 2.3824 | 2.3580 | 2.3322 | 2.3052 |
| -.600 | 2.6244 | 2.6110 | 2.5968 | 2.5814 | 2.5654 | 2.5488 | 2.5308 | 2.5116 | 2.4922 | 2.4714 | 2.4496 | 2.4268 | 2.4026 | 2.3778 |
| -.700 | 2.6746 | 2.6636 | 2.6506 | 2.6366 | 2.6218 | 2.6060 | 2.5896 | 2.5726 | 2.5556 | 2.5374 | 2.5182 | 2.4988 | 2.4780 | 2.4570 |
| -.800 | 2.7256 | 2.7140 | 2.7024 | 2.6898 | 2.6760 | 2.6616 | 2.6464 | 2.6302 | 2.6132 | 2.5952 | 2.5762 | 2.5566 | 2.5356 | 2.5138 |

| $\frac{P_1}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5650 | 0.5402 | 0.5192 | 0.4982 | 0.4772 | 0.4562 | 0.4352 | 0.4142 | 0.3932 | 0.3722 | 0.3512 | 0.3302 | 0.3092 |
| .700 | 0.8508 | .7254 | 0.5692 | 0.5426 | 0.5160 | 0.4894 | 0.4628 | 0.4362 | 0.4096 | 0.3830 | 0.3564 | 0.3298 | 0.3032 |
| .600 | 1.0596 | .9648 | .8570 | .7306 | 0.5732 | 0.4450 | 0.3358 | 0.2472 | 0.1694 | 0.0916 | 0.0138 | -.0640 | -.1418 |
| .500 | 1.2312 | 1.1532 | 1.0674 | .9720 | .8632 | .7358 | 0.5772 | 0.3474 | 0.1376 | -.0822 | -.2920 | -.4918 | -.6916 |
| .400 | 1.3800 | 1.3130 | 1.2406 | 1.1618 | 1.0752 | .9788 | .8694 | .7408 | 0.5810 | 0.3498 | 0.1386 | -.0822 | -.2920 |
| .300 | 1.5124 | 1.4534 | 1.3904 | 1.3228 | 1.2496 | 1.1702 | 1.0830 | .9856 | .8754 | .7460 | 0.5850 | 0.3520 | 0.1390 |
| .250 | 1.5740 | 1.5184 | 1.4588 | 1.3956 | 1.3274 | 1.2542 | 1.1744 | 1.0866 | .9890 | .8784 | .7484 | .5868 | 0.3532 |
| .200 | 1.6328 | 1.5800 | 1.5238 | 1.4614 | 1.4006 | 1.3324 | 1.2586 | 1.1784 | 1.0904 | .9924 | .8812 | .7508 | .5888 |
| .150 | 1.6892 | 1.6390 | 1.5860 | 1.5296 | 1.4696 | 1.4058 | 1.3374 | 1.2628 | 1.1826 | 1.0940 | .9958 | .8840 | .7534 |
| .100 | 1.7432 | 1.6956 | 1.6452 | 1.5920 | 1.5352 | 1.4750 | 1.4108 | 1.3420 | 1.2674 | 1.1866 | 1.0978 | .9990 | .8870 |
| .075 | 1.7698 | 1.7230 | 1.6740 | 1.6220 | 1.5670 | 1.5086 | 1.4462 | 1.3794 | 1.3076 | 1.2302 | 1.1454 | 1.0514 | .9464 |
| .050 | 1.7956 | 1.7502 | 1.7020 | 1.6514 | 1.5976 | 1.5410 | 1.4806 | 1.4158 | 1.3464 | 1.2718 | 1.1908 | 1.1014 | 1.0026 |
| .025 | 1.8210 | 1.7766 | 1.7296 | 1.6802 | 1.6278 | 1.5728 | 1.5110 | 1.4512 | 1.3842 | 1.3122 | 1.2342 | 1.1494 | 1.0552 |
| 0 | 1.8462 | 1.8024 | 1.7568 | 1.7086 | 1.6574 | 1.6036 | 1.5468 | 1.4866 | 1.4208 | 1.3512 | 1.2762 | 1.1946 | 1.1052 |
| -.025 | 1.8708 | 1.8282 | 1.7834 | 1.7362 | 1.6864 | 1.6342 | 1.5784 | 1.5192 | 1.4562 | 1.3888 | 1.3168 | 1.2384 | 1.1530 |
| -.050 | 1.8948 | 1.8532 | 1.8094 | 1.7636 | 1.7148 | 1.6638 | 1.6096 | 1.5520 | 1.4908 | 1.4258 | 1.3560 | 1.2806 | 1.1986 |
| -.075 | 1.9188 | 1.8782 | 1.8350 | 1.7902 | 1.7426 | 1.6928 | 1.6400 | 1.5838 | 1.5246 | 1.4616 | 1.3938 | 1.3210 | 1.2426 |
| -.100 | 1.9422 | 1.9024 | 1.8602 | 1.8162 | 1.7700 | 1.7214 | 1.6700 | 1.6152 | 1.5574 | 1.4960 | 1.4308 | 1.3606 | 1.2848 |
| -.150 | 1.9880 | 1.9498 | 1.9094 | 1.8676 | 1.8232 | 1.7768 | 1.7276 | 1.6756 | 1.6210 | 1.5630 | 1.5014 | 1.4356 | 1.3650 |
| -.200 | 2.0326 | 1.9960 | 1.9574 | 1.9170 | 1.8744 | 1.8298 | 1.7834 | 1.7358 | 1.6816 | 1.6266 | 1.5686 | 1.5064 | 1.4406 |
| -.250 | 2.0758 | 2.0408 | 2.0038 | 1.9650 | 1.9242 | 1.8818 | 1.8368 | 1.7894 | 1.7398 | 1.6878 | 1.6322 | 1.5738 | 1.5114 |
| -.300 | 2.1182 | 2.0844 | 2.0486 | 2.0116 | 1.9724 | 1.9314 | 1.8886 | 1.8432 | 1.7960 | 1.7462 | 1.6936 | 1.6380 | 1.5792 |
| -.400 | 2.1998 | 2.1682 | 2.1352 | 2.1008 | 2.0644 | 2.0270 | 1.9874 | 1.9458 | 1.9022 | 1.8566 | 1.8088 | 1.7580 | 1.7054 |
| -.500 | 2.2776 | 2.2480 | 2.2174 | 2.1864 | 2.1516 | 2.1168 | 2.0802 | 2.0420 | 2.0016 | 1.9598 | 1.9158 | 1.8694 | 1.8214 |
| -.600 | 2.3516 | 2.3242 | 2.2954 | 2.2660 | 2.2346 | 2.2022 | 2.1684 | 2.1326 | 2.0956 | 2.0568 | 2.0164 | 1.9738 | 1.9294 |
| -.700 | 2.4226 | 2.3972 | 2.3704 | 2.3428 | 2.3136 | 2.2836 | 2.2522 | 2.2188 | 2.1842 | 2.1482 | 2.1106 | 2.0714 | 2.0306 |
| -.800 | 2.4912 | 2.4674 | 2.4424 | 2.4166 | 2.3892 | 2.3612 | 2.3320 | 2.3008 | 2.2666 | 2.2312 | 2.2002 | 2.1636 | 2.1258 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_o = 0.60]$$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 1.6350 | 1.5950 | 1.5524 | 1.5066 | 1.4576 | 1.4050 | 1.3486 | 1.2876 | 1.2212 | 1.1490 | 1.0692 | 0.9806 | 0.8796 | 0.7624 | |
| .700 | 1.7276 | 1.6916 | 1.6534 | 1.6126 | 1.5690 | 1.5224 | 1.4728 | 1.4194 | 1.3620 | 1.3000 | 1.2330 | 1.1596 | 1.0792 | .9894 | |
| .600 | 1.8140 | 1.7816 | 1.7470 | 1.7102 | 1.6714 | 1.6298 | 1.5854 | 1.5380 | 1.4874 | 1.4332 | 1.3752 | 1.3124 | 1.2440 | 1.1704 | |
| .500 | 1.8952 | 1.8658 | 1.8346 | 1.8014 | 1.7662 | 1.7288 | 1.6888 | 1.6466 | 1.6016 | 1.5534 | 1.5020 | 1.4470 | 1.3882 | 1.3246 | |
| .400 | 1.9718 | 1.9452 | 1.9170 | 1.8868 | 1.8548 | 1.8210 | 1.7848 | 1.7468 | 1.7062 | 1.6630 | 1.6172 | 1.5684 | 1.5164 | 1.4606 | |
| .300 | 2.0446 | 2.0202 | 1.9948 | 1.9674 | 1.9382 | 1.9076 | 1.8746 | 1.8402 | 1.8032 | 1.7644 | 1.7232 | 1.6794 | 1.6326 | 1.5832 | |
| .250 | 2.0796 | 2.0566 | 2.0320 | 2.0060 | 1.9784 | 1.9488 | 1.9176 | 1.8846 | 1.8496 | 1.8126 | 1.7732 | 1.7318 | 1.6872 | 1.6404 | |
| .200 | 2.1136 | 2.0918 | 2.0684 | 2.0436 | 2.0172 | 1.9890 | 1.9592 | 1.9278 | 1.8942 | 1.8590 | 1.8216 | 1.7820 | 1.7398 | 1.6952 | |
| .150 | 2.1472 | 2.1262 | 2.1040 | 2.0800 | 2.0550 | 2.0282 | 1.9996 | 1.9696 | 1.9378 | 1.9040 | 1.8682 | 1.8308 | 1.7904 | 1.7482 | |
| .100 | 2.1798 | 2.1598 | 2.1386 | 2.1158 | 2.0914 | 2.0662 | 2.0392 | 2.0104 | 1.9798 | 1.9476 | 1.9134 | 1.8776 | 1.8392 | 1.7988 | |
| .075 | 2.1958 | 2.1764 | 2.1556 | 2.1334 | 2.1100 | 2.0850 | 2.0582 | 2.0302 | 2.0004 | 1.9688 | 1.9356 | 1.9004 | 1.8630 | 1.8238 | |
| .050 | 2.2116 | 2.1928 | 2.1724 | 2.1508 | 2.1278 | 2.1034 | 2.0774 | 2.0500 | 2.0210 | 1.9900 | 1.9574 | 1.9232 | 1.8864 | 1.8480 | |
| .025 | 2.2274 | 2.2088 | 2.1892 | 2.1680 | 2.1456 | 2.1216 | 2.0964 | 2.0694 | 2.0410 | 2.0106 | 1.9788 | 1.9452 | 1.9096 | 1.8720 | |
| 0 | 2.2428 | 2.2252 | 2.2056 | 2.1850 | 2.1622 | 2.1396 | 2.1148 | 2.0884 | 2.0608 | 2.0312 | 2.0000 | 1.9672 | 1.9324 | 1.8956 | |
| -.025 | 2.2582 | 2.2406 | 2.2218 | 2.2018 | 2.1804 | 2.1574 | 2.1332 | 2.1074 | 2.0802 | 2.0512 | 2.0208 | 1.9888 | 1.9546 | 1.9188 | |
| -.050 | 2.2742 | 2.2566 | 2.2372 | 2.2182 | 2.1974 | 2.1750 | 2.1510 | 2.1262 | 2.0996 | 2.0712 | 2.0416 | 2.0102 | 1.9776 | 1.9440 | |
| -.075 | 2.2894 | 2.2716 | 2.2538 | 2.2346 | 2.2142 | 2.1924 | 2.1692 | 2.1446 | 2.1186 | 2.0910 | 2.0618 | 2.0312 | 1.9984 | 1.9640 | |
| -.100 | 2.3036 | 2.2872 | 2.2696 | 2.2508 | 2.2310 | 2.2094 | 2.1868 | 2.1628 | 2.1374 | 2.1104 | 2.0820 | 2.0518 | 2.0198 | 1.9862 | |
| -.150 | 2.3330 | 2.3172 | 2.3008 | 2.2828 | 2.2636 | 2.2432 | 2.2216 | 2.1988 | 2.1742 | 2.1484 | 2.1212 | 2.0926 | 2.0618 | 2.0296 | |
| -.200 | 2.3616 | 2.3470 | 2.3310 | 2.3140 | 2.2958 | 2.2766 | 2.2558 | 2.2338 | 2.2104 | 2.1856 | 2.1596 | 2.1320 | 2.1026 | 2.0718 | |
| -.250 | 2.3900 | 2.3758 | 2.3610 | 2.3448 | 2.3274 | 2.3090 | 2.2890 | 2.2680 | 2.2456 | 2.2220 | 2.1970 | 2.1706 | 2.1422 | 2.1128 | |
| -.300 | 2.4178 | 2.4040 | 2.3902 | 2.3748 | 2.3582 | 2.3406 | 2.3218 | 2.3016 | 2.2802 | 2.2574 | 2.2334 | 2.2082 | 2.1812 | 2.1530 | |
| -.400 | 2.4718 | 2.4598 | 2.4472 | 2.4332 | 2.4182 | 2.4022 | 2.3850 | 2.3666 | 2.3470 | 2.3260 | 2.3040 | 2.2806 | 2.2562 | 2.2300 | |
| -.500 | 2.5240 | 2.5134 | 2.5020 | 2.4896 | 2.4762 | 2.4614 | 2.4456 | 2.4290 | 2.4112 | 2.3920 | 2.3718 | 2.3502 | 2.3280 | 2.3036 | |
| -.600 | 2.5746 | 2.5654 | 2.5550 | 2.5440 | 2.5330 | 2.5216 | 2.5094 | 2.4968 | 2.4830 | 2.4682 | 2.4526 | 2.4366 | 2.4198 | 2.3962 | |
| -.700 | 2.6236 | 2.6154 | 2.6064 | 2.5964 | 2.5856 | 2.5738 | 2.5608 | 2.5470 | 2.5322 | 2.5162 | 2.4990 | 2.4814 | 2.4638 | 2.4444 | |
| -.800 | 2.6710 | 2.6638 | 2.6562 | 2.6472 | 2.6376 | 2.6270 | 2.6154 | 2.6032 | 2.5894 | 2.5748 | 2.5594 | 2.5430 | 2.5250 | 2.5062 | |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.6190 | 0.4244 | 0.6242 | 0.4280 | 0.6294 | 0.4314 | 0.6350 | 0.4348 | 0.6388 | 0.4382 | 0.6410 | 0.4416 | 0.6440 | 0.4434 |
| .700 | .8874 | .7690 | .8952 | .7756 | .9028 | .7820 | .9102 | .7946 | .9176 | .8018 | .9212 | .8060 | .9286 | .8134 |
| .600 | 1.0890 | .9982 | 1.1066 | 1.0066 | 1.1172 | 1.0152 | 1.1214 | 1.0236 | 1.1278 | 1.0318 | 1.1306 | 1.0358 | 1.1398 | 1.0438 |
| .500 | 1.2558 | 1.1810 | 1.2670 | 1.1910 | 1.2778 | 1.2012 | 1.2832 | 1.2062 | 1.2940 | 1.2126 | 1.2994 | 1.2212 | 1.3046 | 1.2258 |
| .400 | 1.4010 | 1.3364 | 1.3482 | 1.3482 | 1.3540 | 1.2832 | 1.3656 | 1.2940 | 1.3712 | 1.3082 | 1.3388 | 1.2636 | 1.3116 | 1.2508 |
| .300 | 1.5304 | 1.4738 | 1.4804 | 1.4870 | 1.4936 | 1.4320 | 1.4656 | 1.4478 | 1.4772 | 1.4140 | 1.4440 | 1.3772 | 1.4046 | 1.3398 |
| .250 | 1.5904 | 1.5374 | 1.5444 | 1.5510 | 1.5580 | 1.4998 | 1.5326 | 1.5064 | 1.5390 | 1.4788 | 1.5142 | 1.4440 | 1.4746 | 1.4046 |
| .200 | 1.6480 | 1.5980 | 1.6050 | 1.6120 | 1.6192 | 1.5616 | 1.5958 | 1.5696 | 1.6026 | 1.5426 | 1.5782 | 1.5082 | 1.5388 | 1.4688 |
| .150 | 1.7032 | 1.6556 | 1.6632 | 1.6704 | 1.6778 | 1.6202 | 1.6544 | 1.6282 | 1.6614 | 1.6014 | 1.6366 | 1.5666 | 1.5972 | 1.5272 |
| .100 | 1.7562 | 1.7112 | 1.7188 | 1.7264 | 1.7340 | 1.6764 | 1.7106 | 1.6846 | 1.7178 | 1.6578 | 1.6930 | 1.6230 | 1.6536 | 1.5836 |
| .075 | 1.7822 | 1.7380 | 1.7456 | 1.7532 | 1.7608 | 1.7032 | 1.7374 | 1.7114 | 1.7446 | 1.6846 | 1.7198 | 1.6498 | 1.6804 | 1.6104 |
| .050 | 1.8074 | 1.7644 | 1.7720 | 1.7796 | 1.7872 | 1.7296 | 1.7638 | 1.7378 | 1.7710 | 1.7110 | 1.7462 | 1.6762 | 1.7068 | 1.6368 |
| .025 | 1.8324 | 1.7904 | 1.7980 | 1.8056 | 1.8132 | 1.7556 | 1.7898 | 1.7638 | 1.7970 | 1.7370 | 1.7722 | 1.7022 | 1.7328 | 1.6628 |
| 0 | 1.8566 | 1.8158 | 1.8234 | 1.8310 | 1.8386 | 1.7810 | 1.8152 | 1.7892 | 1.8224 | 1.7624 | 1.7976 | 1.7276 | 1.7582 | 1.6882 |
| -.025 | 1.8810 | 1.8410 | 1.8486 | 1.8562 | 1.8638 | 1.8062 | 1.8404 | 1.8144 | 1.8476 | 1.7876 | 1.8228 | 1.7528 | 1.7834 | 1.7134 |
| -.050 | 1.9046 | 1.8656 | 1.8732 | 1.8808 | 1.8884 | 1.8308 | 1.8650 | 1.8390 | 1.8722 | 1.8122 | 1.8474 | 1.7774 | 1.8080 | 1.7380 |
| -.075 | 1.9280 | 1.8898 | 1.8974 | 1.9050 | 1.9126 | 1.8550 | 1.8892 | 1.8632 | 1.8964 | 1.8364 | 1.8716 | 1.8016 | 1.8322 | 1.7622 |
| -.100 | 1.9508 | 1.9136 | 1.9212 | 1.9288 | 1.9364 | 1.8788 | 1.9130 | 1.8870 | 1.9202 | 1.8602 | 1.8954 | 1.8254 | 1.8560 | 1.7860 |
| -.150 | 1.9958 | 1.9602 | 1.9678 | 1.9754 | 1.9830 | 1.9254 | 1.9596 | 1.9336 | 1.9668 | 1.9068 | 1.9420 | 1.8720 | 1.9026 | 1.8326 |
| -.200 | 2.0394 | 2.0054 | 2.0130 | 2.0206 | 2.0282 | 1.9706 | 2.0048 | 1.9788 | 2.0120 | 1.9520 | 1.9872 | 1.9172 | 1.9478 | 1.8778 |
| -.250 | 2.0818 | 2.0492 | 2.0568 | 2.0644 | 2.0720 | 2.0144 | 2.0486 | 2.0226 | 2.0558 | 1.9958 | 2.0310 | 1.9610 | 1.9916 | 1.9216 |
| -.300 | 2.1232 | 2.0918 | 2.0994 | 2.1070 | 2.1146 | 2.0570 | 2.0912 | 2.0652 | 2.0984 | 2.0384 | 2.0736 | 2.0036 | 2.0342 | 1.9642 |
| -.400 | 2.2028 | 2.1738 | 2.1814 | 2.1890 | 2.1966 | 2.1390 | 2.1732 | 2.1472 | 2.1804 | 2.1204 | 2.1556 | 2.0856 | 2.1162 | 2.0462 |
| -.500 | 2.2786 | 2.2518 | 2.2594 | 2.2670 | 2.2746 | 2.2170 | 2.2512 | 2.2252 | 2.2584 | 2.1984 | 2.2336 | 2.1636 | 2.1942 | 2.1242 |
| -.600 | 2.3508 | 2.3262 | 2.3338 | 2.3414 | 2.3490 | 2.2914 | 2.3256 | 2.3000 | 2.3332 | 2.2732 | 2.3084 | 2.2384 | 2.2690 | 2.1990 |
| -.700 | 2.4200 | 2.3974 | 2.4050 | 2.4126 | 2.4202 | 2.3626 | 2.3968 | 2.3712 | 2.4044 | 2.3444 | 2.3796 | 2.3096 | 2.3402 | 2.2702 |
| -.800 | 2.4864 | 2.4660 | 2.4736 | 2.4812 | 2.4888 | 2.4312 | 2.4654 | 2.4398 | 2.4730 | 2.4130 | 2.4482 | 2.3782 | 2.4088 | 2.3388 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_o = 0.65]$$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6246 | 1.5886 | 1.5498 | 1.5076 | 1.4622 | 1.4134 | 1.3606 | 1.3032 | 1.2404 | 1.1722 | 1.0964 | 1.0122 | 0.9168 | 0.8064 | 0.8064 |
| .700 | 1.7134 | 1.6814 | 1.6468 | 1.6100 | 1.5698 | 1.5270 | 1.4806 | 1.4306 | 1.3768 | 1.3182 | 1.2546 | 1.1850 | 1.1084 | 1.0230 | 1.0230 |
| .600 | 1.7962 | 1.7678 | 1.7372 | 1.7040 | 1.6686 | 1.6304 | 1.5896 | 1.5456 | 1.4982 | 1.4474 | 1.3926 | 1.3330 | 1.2682 | 1.1978 | 1.1978 |
| .500 | 1.8740 | 1.8486 | 1.8212 | 1.7920 | 1.7602 | 1.7262 | 1.6898 | 1.6508 | 1.6088 | 1.5640 | 1.5160 | 1.4640 | 1.4080 | 1.3478 | 1.3478 |
| .400 | 1.9472 | 1.9248 | 1.9004 | 1.8740 | 1.8458 | 1.8156 | 1.7828 | 1.7480 | 1.7106 | 1.6706 | 1.6278 | 1.5822 | 1.5330 | 1.4802 | 1.4802 |
| .300 | 2.0168 | 1.9968 | 1.9750 | 1.9514 | 1.9260 | 1.8988 | 1.8696 | 1.8384 | 1.8050 | 1.7692 | 1.7308 | 1.6902 | 1.6464 | 1.5998 | 1.5998 |
| .250 | 2.0502 | 2.0314 | 2.0108 | 1.9884 | 1.9646 | 1.9386 | 1.9112 | 1.8814 | 1.8496 | 1.8158 | 1.7796 | 1.7414 | 1.6996 | 1.6554 | 1.6554 |
| .200 | 2.0828 | 2.0652 | 2.0456 | 2.0246 | 2.0024 | 1.9776 | 1.9512 | 1.9232 | 1.8930 | 1.8608 | 1.8264 | 1.7900 | 1.7506 | 1.7090 | 1.7090 |
| .150 | 2.1146 | 2.0980 | 2.0798 | 2.0598 | 2.0384 | 2.0152 | 1.9904 | 1.9638 | 1.9352 | 1.9046 | 1.8720 | 1.8372 | 1.8004 | 1.7606 | 1.7606 |
| .100 | 2.1458 | 2.1308 | 2.1128 | 2.0944 | 2.0738 | 2.0520 | 2.0284 | 2.0032 | 1.9758 | 1.9470 | 1.9160 | 1.8832 | 1.8476 | 1.8102 | 1.8102 |
| .075 | 2.1612 | 2.1460 | 2.1294 | 2.1110 | 2.0912 | 2.0700 | 2.0470 | 2.0224 | 1.9958 | 1.9676 | 1.9376 | 1.9054 | 1.8708 | 1.8344 | 1.8344 |
| .050 | 2.1762 | 2.1616 | 2.1452 | 2.1276 | 2.1084 | 2.0878 | 2.0654 | 2.0414 | 2.0156 | 1.9880 | 1.9586 | 1.9274 | 1.8936 | 1.8582 | 1.8582 |
| .025 | 2.1912 | 2.1770 | 2.1612 | 2.1442 | 2.1256 | 2.1052 | 2.0836 | 2.0602 | 2.0350 | 2.0082 | 1.9794 | 1.9490 | 1.9164 | 1.8816 | 1.8816 |
| 0 | 2.2060 | 2.1924 | 2.1770 | 2.1600 | 2.1422 | 2.1226 | 2.1014 | 2.0788 | 2.0542 | 2.0282 | 2.0002 | 1.9704 | 1.9384 | 1.9046 | 1.9046 |
| -.025 | 2.2206 | 2.2072 | 2.1932 | 2.1764 | 2.1590 | 2.1396 | 2.1192 | 2.0970 | 2.0732 | 2.0478 | 2.0202 | 1.9914 | 1.9602 | 1.9272 | 1.9272 |
| -.050 | 2.2350 | 2.2222 | 2.2080 | 2.1920 | 2.1754 | 2.1566 | 2.1366 | 2.1150 | 2.0918 | 2.0668 | 2.0404 | 2.0120 | 1.9816 | 1.9500 | 1.9500 |
| -.075 | 2.2494 | 2.2368 | 2.2224 | 2.2082 | 2.1914 | 2.1734 | 2.1538 | 2.1328 | 2.1102 | 2.0860 | 2.0600 | 2.0326 | 2.0028 | 1.9714 | 1.9714 |
| -.100 | 2.2634 | 2.2516 | 2.2384 | 2.2236 | 2.2074 | 2.1898 | 2.1710 | 2.1504 | 2.1284 | 2.1048 | 2.0796 | 2.0526 | 2.0234 | 1.9930 | 1.9930 |
| -.150 | 2.2914 | 2.2804 | 2.2682 | 2.2544 | 2.2390 | 2.2224 | 2.2044 | 2.1852 | 2.1640 | 2.1422 | 2.1176 | 2.0920 | 2.0644 | 2.0352 | 2.0352 |
| -.200 | 2.3188 | 2.3086 | 2.2970 | 2.2842 | 2.2700 | 2.2544 | 2.2372 | 2.2190 | 2.1990 | 2.1778 | 2.1548 | 2.1304 | 2.1042 | 2.0764 | 2.0764 |
| -.250 | 2.3464 | 2.3364 | 2.3254 | 2.3138 | 2.3002 | 2.2854 | 2.2694 | 2.2514 | 2.2322 | 2.2128 | 2.1912 | 2.1680 | 2.1428 | 2.1166 | 2.1166 |
| -.300 | 2.3722 | 2.3624 | 2.3514 | 2.3398 | 2.3266 | 2.3114 | 2.3008 | 2.2844 | 2.2664 | 2.2472 | 2.2266 | 2.2044 | 2.1806 | 2.1556 | 2.1556 |
| -.400 | 2.4236 | 2.4144 | 2.4030 | 2.3912 | 2.3780 | 2.3750 | 2.3614 | 2.3468 | 2.3310 | 2.3136 | 2.2950 | 2.2752 | 2.2534 | 2.2304 | 2.2304 |
| -.500 | 2.4736 | 2.4644 | 2.4502 | 2.4358 | 2.4212 | 2.4316 | 2.4202 | 2.4072 | 2.3928 | 2.3774 | 2.3606 | 2.3426 | 2.3230 | 2.3022 | 2.3022 |
| -.600 | 2.5212 | 2.5166 | 2.5108 | 2.5038 | 2.4958 | 2.4866 | 2.4766 | 2.4648 | 2.4524 | 2.4384 | 2.4234 | 2.4072 | 2.3894 | 2.3706 | 2.3706 |
| -.700 | 2.5672 | 2.5640 | 2.5596 | 2.5540 | 2.5472 | 2.5394 | 2.5306 | 2.5206 | 2.5096 | 2.4972 | 2.4840 | 2.4694 | 2.4532 | 2.4362 | 2.4362 |
| -.800 | 2.6122 | 2.6102 | 2.6068 | 2.6024 | 2.5972 | 2.5914 | 2.5852 | 2.5774 | 2.5686 | 2.5586 | 2.5476 | 2.5356 | 2.5226 | 2.5086 | 2.5086 |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0.800 | 0.6736 | 0.5016 | 0.2072 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 0.9244 | 0.8146 | 0.6808 | 0.5066 | 0.2092 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 1.1200 | 1.0334 | 0.9358 | 0.8226 | 0.6872 | 0.5112 | 0.2112 | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.2820 | 1.2104 | 1.1316 | 1.0438 | 0.9450 | 0.8306 | 0.6938 | 0.5160 | 0.2130 | ----- | ----- | ----- | ----- | ----- |
| .400 | 1.4232 | 1.3620 | 1.2954 | 1.2228 | 1.1428 | 1.0542 | 0.9540 | 0.8388 | 0.7002 | 0.5206 | 0.2150 | ----- | ----- | ----- |
| .300 | 1.5496 | 1.4960 | 1.4384 | 1.3760 | 1.3084 | 1.2348 | 1.1540 | 1.0642 | 0.9630 | 0.8464 | 0.7066 | 0.5252 | 0.2168 | ----- |
| .250 | 1.6084 | 1.5580 | 1.5040 | 1.4458 | 1.3828 | 1.3148 | 1.2408 | 1.1596 | 1.0692 | 0.9672 | 0.8500 | 0.7096 | 0.5276 | ----- |
| .200 | 1.6646 | 1.6170 | 1.5664 | 1.5116 | 1.4530 | 1.3898 | 1.3214 | 1.2468 | 1.1650 | 1.0742 | 0.9718 | 0.8540 | 0.7126 | ----- |
| .150 | 1.7184 | 1.6736 | 1.6258 | 1.5744 | 1.5192 | 1.4602 | 1.3968 | 1.3276 | 1.2524 | 1.1702 | 1.0790 | 0.9760 | 0.8576 | ----- |
| .100 | 1.7704 | 1.7276 | 1.6826 | 1.6340 | 1.5822 | 1.5270 | 1.4674 | 1.4034 | 1.3340 | 1.2584 | 1.1756 | 1.0838 | 0.9804 | ----- |
| .075 | 1.7954 | 1.7542 | 1.7102 | 1.6628 | 1.6126 | 1.5590 | 1.5014 | 1.4394 | 1.3724 | 1.3002 | 1.2210 | 1.1334 | 1.0360 | ----- |
| .050 | 1.8204 | 1.7800 | 1.7372 | 1.6912 | 1.6424 | 1.5904 | 1.5346 | 1.4744 | 1.4100 | 1.3402 | 1.2642 | 1.1808 | 1.0888 | ----- |
| .025 | 1.8446 | 1.8054 | 1.7636 | 1.7190 | 1.6716 | 1.6208 | 1.5668 | 1.5086 | 1.4462 | 1.3790 | 1.3060 | 1.2262 | 1.1386 | ----- |
| 0 | 1.8684 | 1.8302 | 1.7896 | 1.7462 | 1.6998 | 1.6508 | 1.5982 | 1.5420 | 1.4816 | 1.4166 | 1.3462 | 1.2700 | 1.1860 | ----- |
| -.025 | 1.8920 | 1.8548 | 1.8152 | 1.7728 | 1.7278 | 1.6800 | 1.6292 | 1.5742 | 1.5160 | 1.4530 | 1.3854 | 1.3120 | 1.2320 | ----- |
| -.050 | 1.9152 | 1.8788 | 1.8404 | 1.7990 | 1.7552 | 1.7086 | 1.6590 | 1.6060 | 1.5492 | 1.4886 | 1.4232 | 1.3526 | 1.2758 | ----- |
| -.075 | 1.9380 | 1.9026 | 1.8648 | 1.8246 | 1.7820 | 1.7368 | 1.6886 | 1.6370 | 1.5818 | 1.5234 | 1.4598 | 1.3916 | 1.3178 | ----- |
| -.100 | 1.9604 | 1.9258 | 1.8890 | 1.8500 | 1.8084 | 1.7642 | 1.7172 | 1.6672 | 1.6138 | 1.5568 | 1.4956 | 1.4296 | 1.3586 | ----- |
| -.150 | 2.0042 | 1.9714 | 1.9344 | 1.8990 | 1.8596 | 1.8174 | 1.7732 | 1.7258 | 1.6752 | 1.6214 | 1.5640 | 1.5024 | 1.4364 | ----- |
| -.200 | 2.0470 | 2.0154 | 1.9824 | 1.9466 | 1.9090 | 1.8692 | 1.8268 | 1.7820 | 1.7342 | 1.6832 | 1.6290 | 1.5712 | 1.5092 | ----- |
| -.250 | 2.0884 | 2.0584 | 2.0268 | 1.9926 | 1.9570 | 1.9188 | 1.8780 | 1.8366 | 1.7906 | 1.7424 | 1.6914 | 1.6364 | 1.5786 | ----- |
| -.300 | 2.1286 | 2.1000 | 2.0698 | 2.0374 | 2.0032 | 1.9670 | 1.9290 | 1.8882 | 1.8450 | 1.7992 | 1.7508 | 1.6990 | 1.6440 | ----- |
| -.400 | 2.2062 | 2.1802 | 2.1528 | 2.1232 | 2.0918 | 2.0590 | 2.0242 | 1.9872 | 1.9480 | 1.9066 | 1.8628 | 1.8164 | 1.7672 | ----- |
| -.500 | 2.2800 | 2.2562 | 2.2312 | 2.2042 | 2.1758 | 2.1458 | 2.1138 | 2.0802 | 2.0446 | 2.0070 | 1.9670 | 1.9248 | 1.8804 | ----- |
| -.600 | 2.3502 | 2.3288 | 2.3062 | 2.2814 | 2.2554 | 2.2280 | 2.1990 | 2.1680 | 2.1352 | 2.1010 | 2.0646 | 2.0262 | 1.9850 | ----- |
| -.700 | 2.4178 | 2.3984 | 2.3776 | 2.3552 | 2.3312 | 2.3064 | 2.2796 | 2.2512 | 2.2212 | 2.1898 | 2.1566 | 2.1214 | 2.0844 | ----- |
| -.800 | 2.4828 | 2.4650 | 2.4462 | 2.4254 | 2.4038 | 2.3808 | 2.3562 | 2.3306 | 2.3030 | 2.2742 | 2.2436 | 2.2114 | 2.1774 | ----- |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$M_o = 0.70$

| $\frac{p_1}{q_0}$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.6122 | 1.5806 | 1.5458 | 1.5078 | 1.4664 | 1.4216 | 1.3724 | 1.3188 | 1.2602 | 1.1958 | 1.1244 | 1.0448 | 0.9550 | 0.8516 |
| 0.700 | 1.6970 | 1.6692 | 1.6390 | 1.6058 | 1.5700 | 1.5308 | 1.4884 | 1.4420 | 1.3918 | 1.3370 | 1.2770 | 1.2114 | 1.1388 | 1.0578 |
| 0.600 | 1.7760 | 1.7518 | 1.7254 | 1.6962 | 1.6648 | 1.6306 | 1.5936 | 1.5530 | 1.5094 | 1.4620 | 1.4106 | 1.3546 | 1.2936 | 1.2266 |
| 0.500 | 1.8500 | 1.8292 | 1.8060 | 1.7806 | 1.7532 | 1.7230 | 1.6902 | 1.6548 | 1.6166 | 1.5750 | 1.5302 | 1.4816 | 1.4290 | 1.3724 |
| 0.400 | 1.9198 | 1.9016 | 1.8816 | 1.8596 | 1.8352 | 1.8088 | 1.7800 | 1.7488 | 1.7150 | 1.6784 | 1.6390 | 1.5962 | 1.5504 | 1.5008 |
| 0.300 | 1.9860 | 1.9704 | 1.9530 | 1.9336 | 1.9124 | 1.8890 | 1.8638 | 1.8360 | 1.8062 | 1.7738 | 1.7390 | 1.7014 | 1.6608 | 1.6172 |
| 0.250 | 2.0178 | 2.0032 | 1.9872 | 1.9692 | 1.9494 | 1.9276 | 1.9036 | 1.8776 | 1.8494 | 1.8192 | 1.7862 | 1.7508 | 1.7124 | 1.6716 |
| 0.200 | 2.0486 | 2.0354 | 2.0204 | 2.0038 | 1.9862 | 1.9668 | 1.9448 | 1.9202 | 1.8912 | 1.8628 | 1.8320 | 1.7984 | 1.7624 | 1.7238 |
| 0.150 | 2.0788 | 2.0670 | 2.0530 | 2.0374 | 2.0202 | 2.0012 | 1.9800 | 1.9570 | 1.9322 | 1.9050 | 1.8758 | 1.8444 | 1.8104 | 1.7740 |
| 0.100 | 2.1084 | 2.0974 | 2.0846 | 2.0702 | 2.0542 | 2.0362 | 2.0166 | 1.9950 | 1.9714 | 1.9462 | 1.9186 | 1.8888 | 1.8568 | 1.8224 |
| 0.075 | 2.1230 | 2.1124 | 2.1002 | 2.0866 | 2.0708 | 2.0536 | 2.0346 | 2.0136 | 1.9908 | 1.9660 | 1.9392 | 1.9106 | 1.8792 | 1.8458 |
| 0.050 | 2.1374 | 2.1270 | 2.1156 | 2.1024 | 2.0874 | 2.0706 | 2.0522 | 2.0320 | 2.0098 | 1.9860 | 1.9598 | 1.9320 | 1.9016 | 1.8690 |
| 0.025 | 2.1514 | 2.1420 | 2.1308 | 2.1180 | 2.1036 | 2.0876 | 2.0696 | 2.0502 | 2.0286 | 2.0054 | 1.9802 | 1.9528 | 1.9234 | 1.8918 |
| 0 | 2.1656 | 2.1566 | 2.1460 | 2.1336 | 2.1196 | 2.1042 | 2.0876 | 2.0696 | 2.0502 | 2.0286 | 2.0054 | 1.9802 | 1.9528 | 1.9234 |
| -0.025 | 2.1794 | 2.1708 | 2.1608 | 2.1488 | 2.1356 | 2.1206 | 2.1040 | 2.0856 | 2.0656 | 2.0436 | 2.0198 | 1.9940 | 1.9662 | 1.9362 |
| -0.050 | 2.1934 | 2.1852 | 2.1754 | 2.1642 | 2.1512 | 2.1370 | 2.1208 | 2.1030 | 2.0834 | 2.0620 | 2.0390 | 2.0140 | 1.9870 | 1.9580 |
| -0.075 | 2.2068 | 2.1992 | 2.1900 | 2.1792 | 2.1670 | 2.1530 | 2.1372 | 2.1200 | 2.1012 | 2.0808 | 2.0582 | 2.0338 | 2.0076 | 1.9794 |
| -0.100 | 2.2204 | 2.2130 | 2.2044 | 2.1940 | 2.1822 | 2.1686 | 2.1538 | 2.1372 | 2.1188 | 2.0990 | 2.0770 | 2.0534 | 2.0278 | 2.0004 |
| -0.150 | 2.2470 | 2.2404 | 2.2326 | 2.2232 | 2.2124 | 2.1998 | 2.1858 | 2.1704 | 2.1534 | 2.1346 | 2.1140 | 2.0916 | 2.0676 | 2.0418 |
| -0.200 | 2.2730 | 2.2676 | 2.2604 | 2.2518 | 2.2420 | 2.2304 | 2.2176 | 2.2038 | 2.1870 | 2.1694 | 2.1500 | 2.1292 | 2.1062 | 2.0818 |
| -0.250 | 2.2984 | 2.2938 | 2.2874 | 2.2798 | 2.2708 | 2.2604 | 2.2484 | 2.2348 | 2.2198 | 2.2034 | 2.1852 | 2.1654 | 2.1438 | 2.1204 |
| -0.300 | 2.3234 | 2.3196 | 2.3140 | 2.3074 | 2.2990 | 2.2896 | 2.2784 | 2.2660 | 2.2520 | 2.2366 | 2.2194 | 2.2008 | 2.1804 | 2.1584 |
| -0.400 | 2.3716 | 2.3692 | 2.3658 | 2.3606 | 2.3542 | 2.3462 | 2.3370 | 2.3264 | 2.3140 | 2.3006 | 2.2856 | 2.2690 | 2.2512 | 2.2314 |
| -0.500 | 2.4186 | 2.4176 | 2.4158 | 2.4120 | 2.4068 | 2.4008 | 2.3932 | 2.3840 | 2.3738 | 2.3622 | 2.3490 | 2.3346 | 2.3186 | 2.3012 |
| -0.600 | 2.4640 | 2.4642 | 2.4634 | 2.4610 | 2.4578 | 2.4530 | 2.4470 | 2.4398 | 2.4312 | 2.4210 | 2.4098 | 2.3972 | 2.3830 | 2.3676 |
| -0.700 | 2.5078 | 2.5094 | 2.5096 | 2.5088 | 2.5068 | 2.5038 | 2.4992 | 2.4932 | 2.4862 | 2.4776 | 2.4680 | 2.4570 | 2.4448 | 2.4316 |
| -0.800 | 2.5502 | 2.5530 | 2.5556 | 2.5550 | 2.5542 | 2.5524 | 2.5492 | 2.5450 | 2.5394 | 2.5326 | 2.5242 | 2.5150 | 2.5060 | 2.4926 |

| $\frac{p_1}{q_0}$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|-------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.7288 | 0.5744 | 0.3486 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 0.700 | 0.9666 | 0.8616 | 0.7364 | 0.5812 | 0.3528 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| 0.600 | 1.1526 | 1.0706 | 0.9772 | 0.8714 | 0.7456 | 0.5876 | 0.3566 | ----- | ----- | ----- | ----- | ----- | ----- |
| 0.500 | 1.3096 | 1.2414 | 1.1654 | 1.0830 | 0.9890 | 0.8812 | 0.7536 | 0.5938 | 0.3602 | ----- | ----- | ----- | ----- |
| 0.400 | 1.4472 | 1.3888 | 1.3244 | 1.2562 | 1.1800 | 1.0952 | 1.0000 | 0.8908 | 0.7616 | 0.5998 | 0.3640 | ----- | ----- |
| 0.300 | 1.5702 | 1.5196 | 1.4634 | 1.4054 | 1.3410 | 1.2704 | 1.1930 | 1.1074 | 1.0108 | 0.9000 | 0.7698 | 0.6058 | 0.3674 |
| 0.250 | 1.6276 | 1.5800 | 1.5274 | 1.4734 | 1.4136 | 1.3484 | 1.2776 | 1.1996 | 1.1132 | 1.0160 | 0.9048 | 0.7736 | 0.6086 |
| 0.200 | 1.6822 | 1.6374 | 1.5882 | 1.5378 | 1.4820 | 1.4216 | 1.3562 | 1.2846 | 1.2060 | 1.1190 | 1.0212 | 0.9094 | 0.7772 |
| 0.150 | 1.7348 | 1.6928 | 1.6462 | 1.5992 | 1.5468 | 1.4904 | 1.4296 | 1.3636 | 1.2914 | 1.2124 | 1.1248 | 1.0264 | 0.9136 |
| 0.100 | 1.7854 | 1.7458 | 1.7018 | 1.6576 | 1.6086 | 1.5558 | 1.4988 | 1.4382 | 1.3710 | 1.2984 | 1.2188 | 1.1306 | 1.0316 |
| 0.075 | 1.8100 | 1.7714 | 1.7286 | 1.6856 | 1.6384 | 1.5872 | 1.5322 | 1.4730 | 1.4086 | 1.3390 | 1.2626 | 1.1786 | 1.0852 |
| 0.050 | 1.8342 | 1.7968 | 1.7550 | 1.7134 | 1.6672 | 1.6178 | 1.5646 | 1.5072 | 1.4452 | 1.3782 | 1.3052 | 1.2250 | 1.1362 |
| 0.025 | 1.8580 | 1.8216 | 1.7810 | 1.7406 | 1.6960 | 1.6480 | 1.5964 | 1.5406 | 1.4810 | 1.4162 | 1.3460 | 1.2692 | 1.1846 |
| 0 | 1.8812 | 1.8458 | 1.8064 | 1.7672 | 1.7238 | 1.6772 | 1.6270 | 1.5734 | 1.5156 | 1.4532 | 1.3856 | 1.3118 | 1.2308 |
| -0.025 | 1.9042 | 1.8698 | 1.8312 | 1.7934 | 1.7510 | 1.7056 | 1.6574 | 1.6052 | 1.5492 | 1.4888 | 1.4238 | 1.3530 | 1.2740 |
| -0.050 | 1.9268 | 1.8932 | 1.8556 | 1.8190 | 1.7780 | 1.7338 | 1.6868 | 1.6364 | 1.5820 | 1.5236 | 1.4608 | 1.3926 | 1.3186 |
| -0.075 | 1.9488 | 1.9162 | 1.8798 | 1.8404 | 1.8042 | 1.7614 | 1.7156 | 1.6668 | 1.6142 | 1.5576 | 1.4968 | 1.4312 | 1.3598 |
| -0.100 | 1.9708 | 1.9392 | 1.9034 | 1.8688 | 1.8300 | 1.7884 | 1.7440 | 1.6964 | 1.6454 | 1.5904 | 1.5318 | 1.4682 | 1.3998 |
| -0.150 | 2.0136 | 1.9836 | 1.9496 | 1.9168 | 1.8800 | 1.8408 | 1.7988 | 1.7538 | 1.7056 | 1.6540 | 1.5992 | 1.5398 | 1.4760 |
| -0.200 | 2.0552 | 2.0266 | 1.9942 | 1.9634 | 1.9286 | 1.8914 | 1.8514 | 1.8092 | 1.7634 | 1.7152 | 1.6630 | 1.6076 | 1.5478 |
| -0.250 | 2.0956 | 2.0684 | 2.0378 | 2.0084 | 1.9754 | 1.9402 | 1.9024 | 1.8622 | 1.8190 | 1.7734 | 1.7244 | 1.6718 | 1.6158 |
| -0.300 | 2.1348 | 2.1092 | 2.0798 | 2.0522 | 2.0210 | 1.9874 | 1.9516 | 1.9134 | 1.8724 | 1.8292 | 1.7830 | 1.7334 | 1.6806 |
| -0.400 | 2.2104 | 2.1870 | 2.1606 | 2.1362 | 2.1078 | 2.0774 | 2.0450 | 2.0106 | 1.9738 | 1.9348 | 1.8932 | 1.8490 | 1.8018 |
| -0.500 | 2.2820 | 2.2614 | 2.2374 | 2.2154 | 2.1900 | 2.1624 | 2.1334 | 2.1020 | 2.0688 | 2.0334 | 1.9960 | 1.9560 | 1.9134 |
| -0.600 | 2.3506 | 2.3320 | 2.3102 | 2.2908 | 2.2678 | 2.2430 | 2.2168 | 2.1884 | 2.1582 | 2.1262 | 2.0922 | 2.0560 | 2.0258 |
| -0.700 | 2.4164 | 2.3996 | 2.3800 | 2.3628 | 2.3420 | 2.3198 | 2.2958 | 2.2702 | 2.2428 | 2.2136 | 2.1826 | 2.1500 | 2.1150 |
| -0.800 | 2.4794 | 2.4648 | 2.4466 | 2.4314 | 2.4130 | 2.3926 | 2.3702 | 2.3478 | 2.3230 | 2.2964 | 2.2684 | 2.2386 | 2.2072 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

 $[M_0 = 0.75]$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 0.800 | 1.5976 | 1.5702 | 1.5402 | 1.5068 | 1.4700 | 1.4294 | 1.3844 | 1.3350 | 1.2804 | 1.2206 | 1.1538 | 1.0792 | 0.9948 | 0.8982 | 0.7900 |
| .700 | 1.5778 | 1.5504 | 1.5204 | 1.4870 | 1.4502 | 1.4096 | 1.3646 | 1.3152 | 1.2606 | 1.2008 | 1.1340 | 1.0594 | 0.9750 | 0.8784 | 0.7700 |
| .600 | 1.5580 | 1.5306 | 1.4996 | 1.4662 | 1.4294 | 1.3888 | 1.3438 | 1.2944 | 1.2398 | 1.1800 | 1.1132 | 1.0386 | 0.9542 | 0.8576 | 0.7500 |
| .500 | 1.5382 | 1.5108 | 1.4798 | 1.4464 | 1.4096 | 1.3690 | 1.3240 | 1.2746 | 1.2200 | 1.1602 | 1.0934 | 1.0188 | 0.9344 | 0.8378 | 0.7300 |
| .400 | 1.5184 | 1.4910 | 1.4600 | 1.4266 | 1.3898 | 1.3492 | 1.3042 | 1.2548 | 1.2002 | 1.1404 | 1.0736 | 1.0090 | 0.9246 | 0.8280 | 0.7200 |
| .300 | 1.4986 | 1.4712 | 1.4402 | 1.4068 | 1.3700 | 1.3294 | 1.2844 | 1.2350 | 1.1804 | 1.1206 | 1.0538 | 0.9892 | 0.9048 | 0.8082 | 0.7000 |
| .250 | 1.4788 | 1.4514 | 1.4204 | 1.3870 | 1.3502 | 1.3096 | 1.2646 | 1.2152 | 1.1606 | 1.1008 | 1.0340 | 0.9694 | 0.8850 | 0.7884 | 0.6800 |
| .200 | 1.4590 | 1.4316 | 1.4006 | 1.3672 | 1.3304 | 1.2898 | 1.2448 | 1.1954 | 1.1408 | 1.0810 | 1.0142 | 0.9496 | 0.8652 | 0.7686 | 0.6600 |
| .150 | 1.4392 | 1.4118 | 1.3808 | 1.3474 | 1.3106 | 1.2700 | 1.2250 | 1.1756 | 1.1210 | 1.0612 | 0.9944 | 0.9298 | 0.8454 | 0.7488 | 0.6400 |
| .100 | 1.4194 | 1.3920 | 1.3610 | 1.3276 | 1.2908 | 1.2502 | 1.2052 | 1.1558 | 1.1012 | 1.0414 | 0.9746 | 0.9100 | 0.8256 | 0.7290 | 0.6200 |
| .075 | 1.3996 | 1.3722 | 1.3412 | 1.3078 | 1.2710 | 1.2304 | 1.1854 | 1.1360 | 1.0814 | 1.0216 | 0.9548 | 0.8902 | 0.8058 | 0.7092 | 0.6000 |
| .050 | 1.3798 | 1.3524 | 1.3214 | 1.2880 | 1.2512 | 1.2106 | 1.1656 | 1.1162 | 1.0616 | 1.0018 | 0.9350 | 0.8704 | 0.7860 | 0.6894 | 0.5800 |
| .025 | 1.3600 | 1.3326 | 1.3016 | 1.2682 | 1.2314 | 1.1908 | 1.1458 | 1.0964 | 1.0418 | 0.9820 | 0.9152 | 0.8506 | 0.7662 | 0.6696 | 0.5600 |
| 0 | 1.3402 | 1.3128 | 1.2818 | 1.2484 | 1.2116 | 1.1710 | 1.1260 | 1.0766 | 1.0220 | 0.9622 | 0.8954 | 0.8308 | 0.7464 | 0.6498 | 0.5400 |
| -0.025 | 1.3204 | 1.2930 | 1.2620 | 1.2286 | 1.1918 | 1.1512 | 1.1062 | 1.0568 | 1.0022 | 0.9424 | 0.8756 | 0.8110 | 0.7266 | 0.6300 | 0.5200 |
| -0.050 | 1.3006 | 1.2732 | 1.2422 | 1.2088 | 1.1720 | 1.1314 | 1.0864 | 1.0370 | 0.9824 | 0.9226 | 0.8558 | 0.7912 | 0.7068 | 0.6102 | 0.5000 |
| -0.075 | 1.2808 | 1.2534 | 1.2224 | 1.1890 | 1.1522 | 1.1116 | 1.0666 | 1.0172 | 0.9626 | 0.9028 | 0.8360 | 0.7714 | 0.6870 | 0.5904 | 0.4800 |
| -0.100 | 1.2610 | 1.2336 | 1.2026 | 1.1692 | 1.1324 | 1.0918 | 1.0468 | 0.9974 | 0.9428 | 0.8830 | 0.8162 | 0.7516 | 0.6672 | 0.5706 | 0.4600 |
| -0.150 | 1.2212 | 1.1938 | 1.1628 | 1.1294 | 1.0926 | 1.0520 | 1.0070 | 0.9576 | 0.9030 | 0.8432 | 0.7764 | 0.7118 | 0.6274 | 0.5308 | 0.4200 |
| -0.200 | 1.1814 | 1.1540 | 1.1230 | 1.0896 | 1.0528 | 1.0122 | 0.9672 | 0.9178 | 0.8632 | 0.8034 | 0.7366 | 0.6720 | 0.5876 | 0.4910 | 0.3800 |
| -0.250 | 1.1416 | 1.1142 | 1.0832 | 1.0498 | 1.0130 | 0.9724 | 0.9274 | 0.8780 | 0.8234 | 0.7636 | 0.6968 | 0.6322 | 0.5478 | 0.4512 | 0.3400 |
| -0.300 | 1.1018 | 1.0744 | 1.0434 | 1.0100 | 0.9732 | 0.9326 | 0.8876 | 0.8382 | 0.7836 | 0.7238 | 0.6570 | 0.5924 | 0.5080 | 0.4114 | 0.3000 |
| -0.350 | 1.0620 | 1.0346 | 1.0036 | 0.9702 | 0.9334 | 0.8928 | 0.8478 | 0.7984 | 0.7438 | 0.6840 | 0.6172 | 0.5526 | 0.4682 | 0.3716 | 0.2600 |
| -0.400 | 1.0222 | 0.9948 | 0.9638 | 0.9304 | 0.8936 | 0.8530 | 0.8080 | 0.7586 | 0.7040 | 0.6442 | 0.5774 | 0.5128 | 0.4284 | 0.3318 | 0.2200 |
| -0.450 | 0.9824 | 0.9550 | 0.9240 | 0.8906 | 0.8538 | 0.8132 | 0.7682 | 0.7188 | 0.6642 | 0.6044 | 0.5376 | 0.4730 | 0.3886 | 0.2920 | 0.1800 |
| -0.500 | 0.9426 | 0.9152 | 0.8842 | 0.8508 | 0.8140 | 0.7734 | 0.7284 | 0.6790 | 0.6244 | 0.5646 | 0.4978 | 0.4332 | 0.3488 | 0.2522 | 0.1400 |
| -0.550 | 0.9028 | 0.8754 | 0.8444 | 0.8110 | 0.7742 | 0.7336 | 0.6886 | 0.6392 | 0.5846 | 0.5248 | 0.4580 | 0.3934 | 0.3090 | 0.2124 | 0.1000 |
| -0.600 | 0.8630 | 0.8356 | 0.8046 | 0.7712 | 0.7344 | 0.6938 | 0.6488 | 0.5994 | 0.5448 | 0.4850 | 0.4182 | 0.3536 | 0.2692 | 0.1726 | 0.0600 |
| -0.650 | 0.8232 | 0.7958 | 0.7648 | 0.7314 | 0.6946 | 0.6540 | 0.6090 | 0.5596 | 0.5050 | 0.4452 | 0.3784 | 0.3138 | 0.2294 | 0.1328 | 0.0200 |
| -0.700 | 0.7834 | 0.7560 | 0.7250 | 0.6916 | 0.6548 | 0.6142 | 0.5692 | 0.5198 | 0.4652 | 0.4054 | 0.3386 | 0.2740 | 0.1896 | 0.0930 | -0.0200 |
| -0.750 | 0.7436 | 0.7162 | 0.6852 | 0.6518 | 0.6150 | 0.5744 | 0.5294 | 0.4799 | 0.4253 | 0.3655 | 0.2987 | 0.2341 | 0.1497 | 0.0531 | -0.0600 |
| -0.800 | 0.7038 | 0.6764 | 0.6454 | 0.6120 | 0.5752 | 0.5346 | 0.4896 | 0.4402 | 0.3856 | 0.3258 | 0.2590 | 0.1944 | 0.1098 | 0.0132 | -0.1000 |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.7816 | 0.6452 | 0.4580 | 0.2538 | 0.0466 | 0.1692 | 0.4692 | 0.8150 | 1.1550 | 1.4950 | 1.8350 | 2.1750 | 2.5150 | 2.8550 |
| .700 | 1.0088 | 0.9104 | 0.7950 | 0.6538 | 0.4636 | 0.2636 | 0.0636 | 0.1462 | 0.4462 | 0.7920 | 1.1320 | 1.4720 | 1.8120 | 2.1520 |
| .600 | 1.1872 | 1.1098 | 1.0222 | 0.9226 | 0.8052 | 0.6618 | 0.4692 | 0.2636 | 0.0636 | 0.1462 | 0.4462 | 0.7920 | 1.1320 | 1.4720 |
| .500 | 1.3390 | 1.2746 | 1.2036 | 1.1242 | 1.0354 | 0.9340 | 0.8150 | 0.6696 | 0.4746 | 0.2696 | 0.0696 | 0.1546 | 0.4546 | 0.7946 |
| .400 | 1.4722 | 1.4174 | 1.3574 | 1.2918 | 1.2192 | 1.1388 | 1.0484 | 0.9454 | 0.8250 | 0.6778 | 0.4800 | 0.2822 | 0.0844 | 0.1844 |
| .300 | 1.5918 | 1.5446 | 1.4930 | 1.4368 | 1.3756 | 1.3086 | 1.2348 | 1.1530 | 1.0610 | 0.9566 | 0.8344 | 0.6852 | 0.4850 | 0.2850 |
| .250 | 1.6478 | 1.6032 | 1.5552 | 1.5030 | 1.4464 | 1.3846 | 1.3168 | 1.2422 | 1.1598 | 1.0672 | 0.9618 | 0.8390 | 0.6890 | 0.4890 |
| .200 | 1.7010 | 1.6596 | 1.6168 | 1.5660 | 1.5130 | 1.4558 | 1.3932 | 1.3250 | 1.2498 | 1.1668 | 1.0734 | 0.9674 | 0.8436 | 0.6436 |
| .150 | 1.7522 | 1.7132 | 1.6712 | 1.6254 | 1.5764 | 1.5228 | 1.4648 | 1.4020 | 1.3330 | 1.2572 | 1.1734 | 1.0799 | 0.9728 | 0.8576 |
| .100 | 1.8014 | 1.7648 | 1.7254 | 1.6826 | 1.6366 | 1.5868 | 1.5326 | 1.4740 | 1.4106 | 1.3410 | 1.2664 | 1.1802 | 1.0854 | 0.9702 |
| .075 | 1.8252 | 1.7900 | 1.7518 | 1.7102 | 1.6656 | 1.6176 | 1.5654 | 1.5086 | 1.4474 | 1.3806 | 1.3074 | 1.2270 | 1.1376 | 1.0482 |
| .050 | 1.8490 | 1.8146 | 1.7776 | 1.7376 | 1.6940 | 1.6472 | 1.5968 | 1.5422 | 1.4832 | 1.4192 | 1.3488 | 1.2718 | 1.1868 | 1.0978 |
| .025 | 1.8720 | 1.8388 | 1.8028 | 1.7640 | 1.7220 | 1.6768 | 1.6278 | 1.5750 | 1.5180 | 1.4560 | 1.3888 | 1.3150 | 1.2340 | 1.1530 |
| 0 | 1.8948 | 1.8626 | 1.8276 | 1.7898 | 1.7492 | 1.7054 | 1.6580 | 1.6070 | 1.5518 | 1.4918 | 1.4262 | 1.3558 | 1.2792 | 1.1982 |
| -0.025 | 1.9172 | 1.8858 | 1.8520 | 1.8154 | 1.7758 | 1.7336 | 1.6876 | 1.6382 | 1.5848 | 1.5278 | 1.4672 | 1.4018 | 1.3314 | 1.2504 |
| -0.050 | 1.9392 | 1.9088 | 1.8760 | 1.8364 | 1.8000 | 1.7608 | 1.7188 | 1.6738 | 1.6258 | 1.5748 | 1.5192 | 1.4588 | 1.3934 | 1.3230 |
| -0.075 | 1.9606 | 1.9314 | 1.8994 | 1.8618 | 1.8278 | 1.7878 | 1.7448 | 1.6988 | 1.6498 | 1.5988 | 1.5442 | 1.4838 | 1.4184 | 1.3480 |
| -0.100 | 1.9820 | 1.9538 | 1.9226 | 1.8850 | 1.8530 | 1.8130 | 1.7700 | 1.7248 | 1.6768 | 1.6258 | 1.5712 | 1.5108 | 1.4454 | 1.3750 |
| -0.150 | 2.0236 | 1.9968 | 1.9678 | 1.9360 | 1.9022 | 1.8656 | 1.8262 | 1.7838 | 1.7382 | 1.6892 | 1.6366 | 1.5800 | 1.5186 | 1.4572 |
| -0.200 | 2.0638 | 2.0386 | 2.0114 | 1.9818 | 1.9496 | 1.9152 | 1.8780 | 1.8380 | 1.7948 | 1.7482 | 1.6978 | 1.6432 | 1.5818 | 1.5204 |
| -0.250 | 2.1032 | 2.0796 | 2.0538 | 2.0258 | 1.9956 | 1.9632 | 1.9288 | 1.8918 | 1.8522 | 1.8102 | 1.7658 | 1.7182 | 1.6668 | 1.6154 |
| -0.300 | 2.1416 | 2.1192 | 2.0950 | 2.0684 | 2.0396 | 2.0092 | 1.9768 | 1.9418 | 1.9042 | 1.8642 | 1.8218 | 1.7762 | 1.7278 | 1.6794 |
| -0.400 | 2.2148 | 2.1934 | 2.1738 | 2.1504 | 2.1250 | 2.0976 | 2.0678 | 2.0358 | 2.0018 | 1.9658 | 1.9278 | 1.8878 | 1.8458 | 1.8038 |
| -0.500 | 2.2850 | 2.2656 | 2.2488 | 2.2278 | 2.2052 | 2.1806 | 2.1544 | 2.1266 | 2.0972 | 2.0662 | 2.0338 | 2.0002 | 1.9652 | 1.9298 |
| -0.600 | 2.3516 | 2.3344 | 2.3200 | 2.3016 | 2.2814 | 2.2584 | 2.2336 | 2.2078 | 2.1802 | 2.1518 | 2.1224 | 2.0920 | 2.0606 | 2.0282 |
| -0.700 | 2.4152 | 2.4024 | 2.3878 | 2.3720 | 2.3540 | 2.3346 | 2.3136 | 2.2906 | 2.2660 | 2.2402 | 2.2138 | 2.1868 | 2.1592 | 2.1318 |
| -0.800 | 2.4784 | 2.4656 | 2.4530 | 2.4390 | 2.4230 | 2.4062 | 2.3874 | 2.3668 | 2.3448 | 2.3218 | 2.2982 | 2.2742 | 2.2498 | 2.2254 |

TABLE II - Continued

VALUES OF $2 \left(\frac{P_1}{P_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_0 = 0.80$]

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 1.5798 | 1.5586 | 1.5328 | 1.5044 | 1.4722 | 1.4360 | 1.3958 | 1.3510 | 1.3012 | 1.2454 | 1.1836 | 1.1140 | 1.0354 | 0.9454 | |
| .700 | 1.6558 | 1.6382 | 1.6174 | 1.5938 | 1.5670 | 1.5366 | 1.5026 | 1.4646 | 1.4228 | 1.3762 | 1.3246 | 1.2672 | 1.2038 | 1.1324 | |
| .600 | 1.7268 | 1.7128 | 1.6960 | 1.6764 | 1.6538 | 1.6282 | 1.5994 | 1.5676 | 1.5312 | 1.4924 | 1.4488 | 1.4006 | 1.3474 | 1.2884 | |
| .500 | 1.7930 | 1.7826 | 1.7690 | 1.7532 | 1.7344 | 1.7132 | 1.6890 | 1.6618 | 1.6314 | 1.5976 | 1.5602 | 1.5194 | 1.4740 | 1.4244 | |
| .400 | 1.8558 | 1.8480 | 1.8374 | 1.8248 | 1.8098 | 1.7920 | 1.7718 | 1.7486 | 1.7228 | 1.6940 | 1.6620 | 1.6268 | 1.5882 | 1.5452 | |
| .300 | 1.9150 | 1.9104 | 1.9020 | 1.8922 | 1.8802 | 1.8658 | 1.8490 | 1.8296 | 1.8076 | 1.7832 | 1.7556 | 1.7254 | 1.6920 | 1.6550 | |
| .250 | 1.9428 | 1.9394 | 1.9330 | 1.9246 | 1.9140 | 1.9010 | 1.8858 | 1.8680 | 1.8480 | 1.8254 | 1.7998 | 1.7716 | 1.7406 | 1.7062 | |
| .200 | 1.9706 | 1.9682 | 1.9630 | 1.9560 | 1.9466 | 1.9354 | 1.9216 | 1.9052 | 1.8870 | 1.8660 | 1.8424 | 1.8164 | 1.7874 | 1.7558 | |
| .150 | 1.9976 | 1.9962 | 1.9924 | 1.9866 | 1.9786 | 1.9684 | 1.9562 | 1.9416 | 1.9246 | 1.9056 | 1.8838 | 1.8594 | 1.8328 | 1.8030 | |
| .100 | 2.0240 | 2.0236 | 2.0208 | 2.0162 | 2.0098 | 2.0008 | 1.9898 | 1.9766 | 1.9612 | 1.9436 | 1.9238 | 1.9012 | 1.8764 | 1.8488 | |
| .075 | 2.0370 | 2.0372 | 2.0348 | 2.0310 | 2.0250 | 2.0166 | 2.0062 | 1.9938 | 1.9792 | 1.9622 | 1.9432 | 1.9216 | 1.8976 | 1.8710 | |
| .050 | 2.0496 | 2.0504 | 2.0488 | 2.0454 | 2.0398 | 2.0322 | 2.0226 | 2.0108 | 1.9968 | 1.9808 | 1.9624 | 1.9416 | 1.9186 | 1.8928 | |
| .025 | 2.0624 | 2.0636 | 2.0624 | 2.0596 | 2.0548 | 2.0476 | 2.0388 | 2.0276 | 2.0144 | 1.9998 | 1.9838 | 1.9654 | 1.9444 | 1.9204 | |
| 0 | 2.0748 | 2.0764 | 2.0756 | 2.0734 | 2.0694 | 2.0630 | 2.0546 | 2.0440 | 2.0314 | 2.0166 | 2.0000 | 1.9808 | 1.9594 | 1.9354 | |
| -.025 | 2.0870 | 2.0894 | 2.0892 | 2.0874 | 2.0838 | 2.0780 | 2.0702 | 2.0604 | 2.0484 | 2.0344 | 2.0184 | 1.9998 | 1.9794 | 1.9564 | |
| -.050 | 2.0992 | 2.1022 | 2.1024 | 2.1010 | 2.0980 | 2.0928 | 2.0856 | 2.0764 | 2.0652 | 2.0520 | 2.0362 | 2.0186 | 1.9988 | 1.9768 | |
| -.075 | 2.1116 | 2.1146 | 2.1156 | 2.1146 | 2.1124 | 2.1076 | 2.1010 | 2.0922 | 2.0816 | 2.0690 | 2.0542 | 2.0372 | 2.0184 | 1.9964 | |
| -.100 | 2.1234 | 2.1272 | 2.1286 | 2.1282 | 2.1258 | 2.1220 | 2.1158 | 2.1080 | 2.0988 | 2.0858 | 2.0718 | 2.0556 | 2.0372 | 2.0164 | |
| -.150 | 2.1470 | 2.1516 | 2.1538 | 2.1546 | 2.1534 | 2.1506 | 2.1456 | 2.1388 | 2.1298 | 2.1190 | 2.1064 | 2.0914 | 2.0746 | 2.0556 | |
| -.200 | 2.1700 | 2.1756 | 2.1788 | 2.1806 | 2.1804 | 2.1782 | 2.1746 | 2.1688 | 2.1612 | 2.1516 | 2.1410 | 2.1284 | 2.1110 | 2.0934 | |
| -.250 | 2.1924 | 2.1988 | 2.2030 | 2.2058 | 2.2066 | 2.2054 | 2.2030 | 2.1982 | 2.1916 | 2.1832 | 2.1728 | 2.1606 | 2.1464 | 2.1302 | |
| -.300 | 2.2148 | 2.2220 | 2.2270 | 2.2304 | 2.2324 | 2.2322 | 2.2302 | 2.2268 | 2.2212 | 2.2140 | 2.2048 | 2.1936 | 2.1810 | 2.1662 | |
| -.400 | 2.2576 | 2.2666 | 2.2732 | 2.2784 | 2.2820 | 2.2836 | 2.2840 | 2.2820 | 2.2788 | 2.2738 | 2.2666 | 2.2576 | 2.2472 | 2.2348 | |
| -.500 | 2.2990 | 2.3094 | 2.3178 | 2.3246 | 2.3298 | 2.3332 | 2.3350 | 2.3352 | 2.3334 | 2.3312 | 2.3256 | 2.3188 | 2.3106 | 2.3004 | |
| -.600 | 2.3388 | 2.3508 | 2.3606 | 2.3688 | 2.3758 | 2.3808 | 2.3844 | 2.3862 | 2.3864 | 2.3848 | 2.3818 | 2.3774 | 2.3708 | 2.3628 | |
| -.700 | 2.3764 | 2.3908 | 2.4018 | 2.4120 | 2.4200 | 2.4266 | 2.4318 | 2.4354 | 2.4372 | 2.4374 | 2.4362 | 2.4336 | 2.4290 | 2.4228 | |
| -.800 | 2.4146 | 2.4294 | 2.4418 | 2.4532 | 2.4630 | 2.4710 | 2.4776 | 2.4824 | 2.4860 | 2.4878 | 2.4884 | 2.4868 | 2.4844 | 2.4804 | |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|------|
| 0.800 | 0.8406 | 0.7154 | 0.5520 | 0.2994 | 0.5596 | 0.3034 | 0.5670 | 0.3074 | 0.5744 | 0.3114 | 0.5816 | 0.3152 | 0.5890 | |
| .700 | 1.0518 | .9600 | .8532 | .7256 | .8652 | .7358 | .8774 | .7458 | .8890 | .7552 | .9004 | .7646 | .9114 | |
| .600 | 1.2228 | 1.1500 | 1.0678 | .9742 | 1.0836 | .9882 | 1.0986 | 1.0016 | 1.1134 | 1.0146 | 1.1210 | 1.0212 | 1.1280 | |
| .500 | 1.3694 | 1.3088 | 1.2420 | 1.1674 | 1.2602 | 1.1842 | 1.2782 | 1.2006 | 1.2872 | 1.2086 | 1.2958 | 1.2164 | 1.2800 | |
| .400 | 1.4984 | 1.4472 | 1.3908 | 1.3290 | 1.4118 | 1.3486 | 1.4220 | 1.3580 | 1.4372 | 1.3674 | 1.4422 | 1.3768 | 1.4444 | |
| .300 | 1.6148 | 1.5706 | 1.5224 | 1.4698 | 1.5340 | 1.4806 | 1.5422 | 1.4880 | 1.5466 | 1.4924 | 1.5488 | 1.4944 | 1.5488 | |
| .250 | 1.6690 | 1.6276 | 1.5830 | 1.5340 | 1.5952 | 1.5456 | 1.6072 | 1.5568 | 1.6192 | 1.5688 | 1.6296 | 1.5784 | 1.6388 | |
| .200 | 1.7206 | 1.6824 | 1.6410 | 1.5952 | 1.6566 | 1.6072 | 1.6688 | 1.6184 | 1.6792 | 1.6288 | 1.6896 | 1.6384 | 1.6988 | |
| .150 | 1.7704 | 1.7348 | 1.6960 | 1.6536 | 1.7092 | 1.6660 | 1.7224 | 1.6784 | 1.7336 | 1.6888 | 1.7424 | 1.6964 | 1.7504 | |
| .100 | 1.8184 | 1.7852 | 1.7488 | 1.7092 | 1.7626 | 1.7222 | 1.7760 | 1.7344 | 1.7888 | 1.7464 | 1.8008 | 1.7576 | 1.8112 | |
| .075 | 1.8416 | 1.8094 | 1.7744 | 1.7362 | 1.7944 | 1.7544 | 1.8088 | 1.7672 | 1.8216 | 1.7792 | 1.8336 | 1.7904 | 1.8444 | |
| .050 | 1.8646 | 1.8334 | 1.7996 | 1.7626 | 1.8222 | 1.7822 | 1.8368 | 1.7952 | 1.8504 | 1.8088 | 1.8632 | 1.8204 | 1.8744 | |
| .025 | 1.8870 | 1.8570 | 1.8242 | 1.7884 | 1.8484 | 1.8084 | 1.8632 | 1.8216 | 1.8768 | 1.8344 | 1.8896 | 1.8464 | 1.9008 | |
| 0 | 1.9090 | 1.8800 | 1.8484 | 1.8138 | 1.8760 | 1.8360 | 1.8912 | 1.8504 | 1.9056 | 1.8644 | 1.9196 | 1.8776 | 1.9324 | |
| -.025 | 1.9308 | 1.9028 | 1.8724 | 1.8388 | 1.8992 | 1.8600 | 1.9152 | 1.8744 | 1.9296 | 1.8888 | 1.9432 | 1.9016 | 1.9564 | |
| -.050 | 1.9520 | 1.9250 | 1.8956 | 1.8630 | 1.9224 | 1.8824 | 1.9376 | 1.8968 | 1.9520 | 1.9104 | 1.9648 | 1.9232 | 1.9784 | |
| -.075 | 1.9732 | 1.9470 | 1.9186 | 1.8870 | 1.9464 | 1.9056 | 1.9608 | 1.9192 | 1.9744 | 1.9328 | 1.9872 | 1.9456 | 2.0008 | |
| -.100 | 1.9940 | 1.9686 | 1.9410 | 1.9106 | 1.9696 | 1.9288 | 1.9840 | 1.9424 | 1.9976 | 1.9560 | 2.0112 | 1.9696 | 2.0244 | |
| -.150 | 2.0344 | 2.0108 | 1.9850 | 1.9566 | 2.0152 | 1.9744 | 2.0296 | 1.9888 | 2.0432 | 2.0016 | 2.0564 | 2.0148 | 2.0696 | |
| -.200 | 2.0736 | 2.0516 | 2.0276 | 2.0010 | 2.0592 | 2.0184 | 2.0736 | 2.0328 | 2.0880 | 2.0464 | 2.1016 | 2.0600 | 2.1144 | |
| -.250 | 2.1118 | 2.0914 | 2.0676 | 2.0440 | 2.1016 | 2.0608 | 2.1160 | 2.0744 | 2.1296 | 2.0880 | 2.1432 | 2.1016 | 2.1564 | |
| -.300 | 2.1490 | 2.1300 | 2.1092 | 2.0860 | 2.1432 | 2.1024 | 2.1576 | 2.1160 | 2.1712 | 2.1296 | 2.1848 | 2.1432 | 2.1984 | |
| -.400 | 2.2204 | 2.2042 | 2.1864 | 2.1658 | 2.2224 | 2.1816 | 2.2368 | 2.1952 | 2.2504 | 2.2088 | 2.2632 | 2.2216 | 2.2764 | |
| -.500 | 2.2882 | 2.2744 | 2.2590 | 2.2414 | 2.2968 | 2.2560 | 2.3112 | 2.2704 | 2.3256 | 2.2848 | 2.3392 | 2.2984 | 2.3536 | |
| -.600 | 2.3532 | 2.3414 | 2.3288 | 2.3132 | 2.3688 | 2.3280 | 2.3832 | 2.3424 | 2.3976 | 2.3568 | 2.4112 | 2.3704 | 2.4256 | |
| -.700 | 2.4150 | 2.4056 | 2.3948 | 2.3818 | 2.4372 | 2.3964 | 2.4516 | 2.4108 | 2.4660 | 2.4252 | 2.4804 | 2.4396 | 2.4948 | |
| -.800 | 2.4744 | 2.4668 | 2.4582 | 2.4472 | 2.5032 | 2.4624 | 2.5176 | 2.4768 | 2.5320 | 2.4912 | 2.5464 | 2.5056 | 2.5608 | |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.85]$$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.5594 | 1.5432 | 1.5238 | 1.5006 | 1.4734 | 1.4424 | 1.4070 | 1.3672 | 1.3220 | 1.2716 | 1.2144 | 1.1502 | 1.0774 | 0.9942 |
| .700 | 1.6310 | 1.6188 | 1.6038 | 1.5854 | 1.5636 | 1.5382 | 1.5090 | 1.4760 | 1.4384 | 1.3964 | 1.3496 | 1.2970 | 1.2378 | 1.1716 |
| .600 | 1.6976 | 1.6892 | 1.6780 | 1.6638 | 1.6464 | 1.6258 | 1.6018 | 1.5744 | 1.5434 | 1.5082 | 1.4688 | 1.4250 | 1.3758 | 1.3216 |
| .500 | 1.7598 | 1.7546 | 1.7472 | 1.7368 | 1.7232 | 1.7066 | 1.6874 | 1.6646 | 1.6386 | 1.6090 | 1.5764 | 1.5394 | 1.4980 | 1.4524 |
| .400 | 1.8186 | 1.8164 | 1.8120 | 1.8046 | 1.7946 | 1.7820 | 1.7664 | 1.7478 | 1.7264 | 1.7020 | 1.6742 | 1.6430 | 1.6082 | 1.5696 |
| .300 | 1.8740 | 1.8748 | 1.8728 | 1.8686 | 1.8618 | 1.8524 | 1.8402 | 1.8256 | 1.8082 | 1.7878 | 1.7644 | 1.7382 | 1.7084 | 1.6754 |
| .250 | 1.9006 | 1.9024 | 1.9022 | 1.8994 | 1.8938 | 1.8860 | 1.8756 | 1.8626 | 1.8466 | 1.8284 | 1.8070 | 1.7830 | 1.7558 | 1.7254 |
| .200 | 1.9264 | 1.9296 | 1.9306 | 1.9288 | 1.9252 | 1.9186 | 1.9098 | 1.8984 | 1.8842 | 1.8676 | 1.8482 | 1.8260 | 1.8010 | 1.7730 |
| .150 | 1.9508 | 1.9560 | 1.9582 | 1.9578 | 1.9552 | 1.9504 | 1.9428 | 1.9328 | 1.9204 | 1.9054 | 1.8880 | 1.8678 | 1.8448 | 1.8190 |
| .100 | 1.9764 | 1.9820 | 1.9852 | 1.9862 | 1.9848 | 1.9812 | 1.9750 | 1.9666 | 1.9556 | 1.9424 | 1.9264 | 1.9082 | 1.8870 | 1.8634 |
| .075 | 1.9884 | 1.9946 | 1.9984 | 2.0000 | 1.9990 | 1.9962 | 1.9908 | 1.9832 | 1.9728 | 1.9604 | 1.9454 | 1.9278 | 1.9076 | 1.8848 |
| .050 | 1.9998 | 2.0072 | 2.0116 | 2.0136 | 2.0134 | 2.0110 | 2.0064 | 1.9992 | 1.9900 | 1.9780 | 1.9638 | 1.9472 | 1.9276 | 1.9060 |
| .025 | 2.0124 | 2.0196 | 2.0244 | 2.0272 | 2.0274 | 2.0256 | 2.0216 | 2.0152 | 2.0066 | 1.9954 | 1.9820 | 1.9664 | 1.9478 | 1.9270 |
| 0 | 2.0260 | 2.0318 | 2.0372 | 2.0404 | 2.0414 | 2.0402 | 2.0369 | 2.0312 | 2.0230 | 2.0126 | 2.0000 | 1.9852 | 1.9674 | 1.9474 |
| -.025 | 2.0356 | 2.0438 | 2.0498 | 2.0536 | 2.0550 | 2.0544 | 2.0518 | 2.0468 | 2.0392 | 2.0298 | 2.0178 | 2.0034 | 1.9868 | 1.9676 |
| -.050 | 2.0470 | 2.0566 | 2.0622 | 2.0666 | 2.0688 | 2.0688 | 2.0666 | 2.0620 | 2.0554 | 2.0464 | 2.0352 | 2.0216 | 2.0056 | 1.9874 |
| -.075 | 2.0582 | 2.0676 | 2.0744 | 2.0794 | 2.0822 | 2.0826 | 2.0810 | 2.0772 | 2.0712 | 2.0630 | 2.0524 | 2.0396 | 2.0224 | 2.0070 |
| -.100 | 2.0694 | 2.0792 | 2.0866 | 2.0922 | 2.0952 | 2.0964 | 2.0954 | 2.0924 | 2.0870 | 2.0792 | 2.0700 | 2.0576 | 2.0430 | 2.0262 |
| -.150 | 2.0912 | 2.1022 | 2.1106 | 2.1172 | 2.1214 | 2.1236 | 2.1236 | 2.1216 | 2.1176 | 2.1112 | 2.1028 | 2.0920 | 2.0792 | 2.0638 |
| -.200 | 2.1150 | 2.1246 | 2.1340 | 2.1416 | 2.1466 | 2.1500 | 2.1514 | 2.1504 | 2.1474 | 2.1428 | 2.1352 | 2.1260 | 2.1144 | 2.1004 |
| -.250 | 2.1342 | 2.1464 | 2.1572 | 2.1654 | 2.1716 | 2.1760 | 2.1782 | 2.1784 | 2.1764 | 2.1728 | 2.1668 | 2.1588 | 2.1486 | 2.1362 |
| -.300 | 2.1516 | 2.1682 | 2.1794 | 2.1890 | 2.1960 | 2.2016 | 2.2046 | 2.2058 | 2.2050 | 2.2022 | 2.1976 | 2.1908 | 2.1820 | 2.1708 |
| -.400 | 2.1918 | 2.2100 | 2.2230 | 2.2342 | 2.2432 | 2.2506 | 2.2554 | 2.2588 | 2.2602 | 2.2594 | 2.2568 | 2.2526 | 2.2460 | 2.2376 |
| -.500 | 2.2334 | 2.2500 | 2.2648 | 2.2776 | 2.2886 | 2.2974 | 2.3044 | 2.3096 | 2.3128 | 2.3142 | 2.3146 | 2.3114 | 2.3072 | 2.3010 |
| -.600 | 2.2708 | 2.2890 | 2.3052 | 2.3206 | 2.3320 | 2.3428 | 2.3514 | 2.3582 | 2.3634 | 2.3666 | 2.3682 | 2.3678 | 2.3658 | 2.3618 |
| -.700 | 2.3070 | 2.3264 | 2.3442 | 2.3600 | 2.3748 | 2.3882 | 2.3966 | 2.4052 | 2.4120 | 2.4170 | 2.4204 | 2.4220 | 2.4216 | 2.4194 |
| -.800 | 2.3416 | 2.3626 | 2.3816 | 2.3990 | 2.4144 | 2.4282 | 2.4402 | 2.4504 | 2.4586 | 2.4654 | 2.4704 | 2.4738 | 2.4750 | 2.4750 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.8976 | 0.7828 | 0.6400 | 0.4426 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 1.0966 | 1.0114 | .9126 | .7954 | 0.6500 | 0.4494 | .8080 | 0.6600 | 0.4558 | ----- | ----- | ----- | ----- |
| .600 | 1.2604 | 1.1924 | 1.1156 | 1.0284 | .9274 | .8080 | 0.6600 | 0.4558 | ----- | ----- | ----- | ----- | ----- |
| .500 | 1.4016 | 1.3452 | 1.2826 | 1.2126 | 1.1338 | 1.0446 | .9416 | .8200 | 0.6694 | 0.4626 | ----- | ----- | ----- |
| .400 | 1.5264 | 1.4790 | 1.4264 | 1.3682 | 1.3038 | 1.2320 | 1.1516 | 1.0604 | .9554 | .8318 | 0.6788 | 0.4688 | ----- |
| .300 | 1.6388 | 1.5984 | 1.5538 | 1.5046 | 1.4504 | 1.3906 | 1.3246 | 1.2512 | 1.1688 | 1.0758 | .9692 | .8432 | 0.6878 |
| .250 | 1.6914 | 1.6538 | 1.6126 | 1.5672 | 1.5172 | 1.4622 | 1.4016 | 1.3348 | 1.2604 | 1.1774 | 1.0836 | .9758 | .8488 |
| .200 | 1.7416 | 1.7070 | 1.6686 | 1.6266 | 1.5804 | 1.5296 | 1.4738 | 1.4126 | 1.3446 | 1.2694 | 1.1858 | 1.0910 | .9824 |
| .150 | 1.7902 | 1.7578 | 1.7222 | 1.6832 | 1.6404 | 1.5936 | 1.5418 | 1.4854 | 1.4230 | 1.3548 | 1.2788 | 1.1940 | 1.0982 |
| .100 | 1.8366 | 1.8066 | 1.7730 | 1.7374 | 1.6982 | 1.6540 | 1.6062 | 1.5540 | 1.4964 | 1.4338 | 1.3644 | 1.2874 | 1.2022 |
| .075 | 1.8590 | 1.8306 | 1.7986 | 1.7636 | 1.7254 | 1.6832 | 1.6372 | 1.5868 | 1.5316 | 1.4712 | 1.4050 | 1.3316 | 1.2502 |
| .050 | 1.8812 | 1.8538 | 1.8232 | 1.7896 | 1.7526 | 1.7120 | 1.6674 | 1.6190 | 1.5658 | 1.5076 | 1.4442 | 1.3740 | 1.2966 |
| .025 | 1.9032 | 1.8766 | 1.8472 | 1.8146 | 1.7788 | 1.7398 | 1.6970 | 1.6500 | 1.5988 | 1.5432 | 1.4820 | 1.4150 | 1.3408 |
| 0 | 1.9244 | 1.8990 | 1.8706 | 1.8396 | 1.8050 | 1.7672 | 1.7258 | 1.6806 | 1.6312 | 1.5776 | 1.5188 | 1.4544 | 1.3834 |
| -.025 | 1.9456 | 1.9212 | 1.8936 | 1.8636 | 1.8306 | 1.7942 | 1.7540 | 1.7106 | 1.6628 | 1.6110 | 1.5544 | 1.4926 | 1.4248 |
| -.050 | 1.9664 | 1.9428 | 1.9166 | 1.8874 | 1.8556 | 1.8204 | 1.7816 | 1.7396 | 1.6936 | 1.6436 | 1.5892 | 1.5296 | 1.4644 |
| -.075 | 1.9868 | 1.9640 | 1.9390 | 1.9108 | 1.8798 | 1.8460 | 1.8086 | 1.7682 | 1.7238 | 1.6754 | 1.6230 | 1.5656 | 1.5032 |
| -.100 | 2.0070 | 1.9852 | 1.9608 | 1.9336 | 1.9040 | 1.8712 | 1.8350 | 1.7966 | 1.7530 | 1.7064 | 1.6558 | 1.6006 | 1.5404 |
| -.150 | 2.0462 | 2.0262 | 2.0036 | 1.9786 | 1.9508 | 1.9204 | 1.8866 | 1.8500 | 1.8100 | 1.7666 | 1.7194 | 1.6678 | 1.6120 |
| -.200 | 2.0812 | 2.0660 | 2.0452 | 2.0218 | 1.9960 | 1.9678 | 1.9364 | 1.9020 | 1.8646 | 1.8240 | 1.7798 | 1.7320 | 1.6798 |
| -.250 | 2.1214 | 2.1046 | 2.0856 | 2.0638 | 2.0398 | 2.0134 | 1.9840 | 1.9522 | 1.9172 | 1.8792 | 1.8378 | 1.7930 | 1.7444 |
| -.300 | 2.1576 | 2.1422 | 2.1244 | 2.1048 | 2.0824 | 2.0578 | 2.0304 | 2.0004 | 1.9676 | 1.9320 | 1.8934 | 1.8512 | 1.8058 |
| -.400 | 2.2270 | 2.2110 | 2.1996 | 2.1826 | 2.1636 | 2.1424 | 2.1184 | 2.0924 | 2.0636 | 2.0324 | 1.9984 | 1.9614 | 1.9214 |
| -.500 | 2.2930 | 2.2826 | 2.2704 | 2.2566 | 2.2402 | 2.2220 | 2.2014 | 2.1786 | 2.0536 | 2.1262 | 2.0962 | 2.0634 | 2.0282 |
| -.600 | 2.3556 | 2.3478 | 2.3382 | 2.3264 | 2.3130 | 2.2976 | 2.2798 | 2.2600 | 2.2382 | 2.2140 | 2.1878 | 2.1590 | 2.1278 |
| -.700 | 2.4168 | 2.4100 | 2.4028 | 2.3932 | 2.3822 | 2.3692 | 2.3542 | 2.2374 | 2.3182 | 2.2972 | 2.2740 | 2.2488 | 2.2210 |
| -.800 | 2.4732 | 2.4698 | 2.4644 | 2.4590 | 2.4482 | 2.4376 | 2.4248 | 2.4106 | 2.3942 | 2.3760 | 2.3558 | 2.3334 | 2.3090 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued $[M_o = 0.90]$

| $\frac{\Delta H}{q_0}$ \ P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.5354 | 1.5254 | 1.5120 | 1.4946 | 1.4732 | 1.4474 | 1.4176 | 1.3828 | 1.3428 | 1.2972 | 1.2454 | 1.1868 | 1.1198 | 1.0434 |
| .700 | 1.6022 | 1.5966 | 1.5876 | 1.5748 | 1.5586 | 1.5386 | 1.5146 | 1.4864 | 1.4540 | 1.4170 | 1.3746 | 1.3268 | 1.2726 | 1.2118 |
| .600 | 1.6614 | 1.6624 | 1.6576 | 1.6490 | 1.6372 | 1.6218 | 1.6030 | 1.5804 | 1.5542 | 1.5236 | 1.4890 | 1.4496 | 1.4050 | 1.3552 |
| .500 | 1.7228 | 1.7242 | 1.7226 | 1.7178 | 1.7100 | 1.6990 | 1.6844 | 1.6666 | 1.6456 | 1.6206 | 1.5922 | 1.5594 | 1.5228 | 1.4812 |
| .400 | 1.7778 | 1.7820 | 1.7834 | 1.7820 | 1.7780 | 1.7704 | 1.7600 | 1.7464 | 1.7298 | 1.7098 | 1.6864 | 1.6594 | 1.6288 | 1.5940 |
| .300 | 1.8294 | 1.8366 | 1.8416 | 1.8426 | 1.8412 | 1.8376 | 1.8306 | 1.8208 | 1.8080 | 1.7920 | 1.7732 | 1.7512 | 1.7256 | 1.6968 |
| .250 | 1.8542 | 1.8626 | 1.8684 | 1.8714 | 1.8716 | 1.8692 | 1.8640 | 1.8560 | 1.8452 | 1.8310 | 1.8142 | 1.7942 | 1.7712 | 1.7448 |
| .200 | 1.8784 | 1.8882 | 1.8952 | 1.9004 | 1.9016 | 1.9002 | 1.8966 | 1.8902 | 1.8810 | 1.8688 | 1.8538 | 1.8358 | 1.8150 | 1.7908 |
| .150 | 1.9020 | 1.9128 | 1.9212 | 1.9268 | 1.9300 | 1.9304 | 1.9282 | 1.9232 | 1.9156 | 1.9054 | 1.8922 | 1.8762 | 1.8572 | 1.8354 |
| .100 | 1.9250 | 1.9372 | 1.9466 | 1.9534 | 1.9578 | 1.9594 | 1.9584 | 1.9556 | 1.9494 | 1.9408 | 1.9292 | 1.9152 | 1.8980 | 1.8782 |
| .075 | 1.9362 | 1.9488 | 1.9590 | 1.9666 | 1.9718 | 1.9738 | 1.9738 | 1.9710 | 1.9658 | 1.9580 | 1.9474 | 1.9340 | 1.9180 | 1.8992 |
| .050 | 1.9474 | 1.9606 | 1.9714 | 1.9796 | 1.9850 | 1.9880 | 1.9886 | 1.9868 | 1.9822 | 1.9750 | 1.9652 | 1.9528 | 1.9376 | 1.9198 |
| .025 | 1.9584 | 1.9722 | 1.9836 | 1.9922 | 1.9984 | 2.0022 | 2.0032 | 2.0018 | 1.9982 | 1.9918 | 1.9822 | 1.9698 | 1.9546 | 1.9368 |
| 0 | 1.9694 | 1.9834 | 1.9952 | 2.0044 | 2.0116 | 2.0160 | 2.0176 | 2.0170 | 2.0142 | 2.0082 | 2.0002 | 1.9892 | 1.9758 | 1.9590 |
| -.025 | 1.9802 | 1.9950 | 2.0074 | 2.0172 | 2.0244 | 2.0294 | 2.0320 | 2.0318 | 2.0294 | 2.0244 | 2.0172 | 2.0070 | 1.9946 | 1.9790 |
| -.050 | 1.9906 | 2.0062 | 2.0190 | 2.0294 | 2.0374 | 2.0428 | 2.0460 | 2.0466 | 2.0446 | 2.0408 | 2.0340 | 2.0246 | 2.0128 | 1.9984 |
| -.075 | 2.0012 | 2.0172 | 2.0306 | 2.0416 | 2.0502 | 2.0562 | 2.0600 | 2.0612 | 2.0600 | 2.0566 | 2.0504 | 2.0420 | 2.0310 | 2.0174 |
| -.100 | 2.0116 | 2.0282 | 2.0418 | 2.0536 | 2.0626 | 2.0694 | 2.0736 | 2.0756 | 2.0750 | 2.0722 | 2.0668 | 2.0590 | 2.0488 | 2.0362 |
| -.150 | 2.0322 | 2.0496 | 2.0646 | 2.0772 | 2.0874 | 2.0950 | 2.1006 | 2.1036 | 2.1042 | 2.1028 | 2.0990 | 2.0926 | 2.0838 | 2.0726 |
| -.200 | 2.0522 | 2.0704 | 2.0866 | 2.1000 | 2.1114 | 2.1202 | 2.1268 | 2.1312 | 2.1330 | 2.1326 | 2.1300 | 2.1250 | 2.1180 | 2.1080 |
| -.250 | 2.0720 | 2.0912 | 2.1080 | 2.1226 | 2.1350 | 2.1448 | 2.1524 | 2.1578 | 2.1610 | 2.1618 | 2.1604 | 2.1570 | 2.1510 | 2.1426 |
| -.300 | 2.0912 | 2.1112 | 2.1290 | 2.1448 | 2.1576 | 2.1688 | 2.1776 | 2.1840 | 2.1882 | 2.1902 | 2.1920 | 2.1874 | 2.1832 | 2.1762 |
| -.400 | 2.1284 | 2.1504 | 2.1710 | 2.1872 | 2.2024 | 2.2154 | 2.2252 | 2.2348 | 2.2410 | 2.2452 | 2.2474 | 2.2448 | 2.2408 | 2.2308 |
| -.500 | 2.1644 | 2.1882 | 2.2092 | 2.2274 | 2.2448 | 2.2600 | 2.2726 | 2.2832 | 2.2914 | 2.2978 | 2.3020 | 2.3040 | 2.3042 | 2.3020 |
| -.600 | 2.1990 | 2.2242 | 2.2472 | 2.2676 | 2.2866 | 2.3028 | 2.3172 | 2.3296 | 2.3400 | 2.3482 | 2.3540 | 2.3586 | 2.3606 | 2.3608 |
| -.700 | 2.2326 | 2.2590 | 2.2838 | 2.3060 | 2.3262 | 2.3442 | 2.3604 | 2.3742 | 2.3864 | 2.3962 | 2.4044 | 2.4104 | 2.4148 | 2.4168 |
| -.800 | 2.2750 | 2.2930 | 2.3188 | 2.3426 | 2.3644 | 2.3838 | 2.4014 | 2.4172 | 2.4310 | 2.4428 | 2.4526 | 2.4606 | 2.4668 | 2.4700 |

| $\frac{\Delta H}{q_0}$ \ P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|--------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.9546 | 0.8504 | 0.7232 | 0.5580 | 0.2982 | ----- | 0.3030 | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 1.1424 | 1.0636 | .9726 | .8656 | .7360 | 0.5676 | 0.3030 | 0.5766 | 0.3078 | ----- | ----- | ----- | ----- |
| .600 | 1.2990 | 1.2358 | 1.1646 | 1.0832 | .9898 | .8806 | .7482 | .8952 | .7598 | 0.5854 | 0.3124 | ----- | ----- |
| .500 | 1.4346 | 1.3826 | 1.3244 | 1.2592 | 1.1856 | 1.1022 | 1.0068 | 1.1208 | 1.0232 | .9094 | .7714 | 0.5944 | 0.3168 |
| .400 | 1.5552 | 1.5118 | 1.4630 | 1.4090 | 1.3490 | 1.2814 | 1.2062 | 1.1208 | 1.0232 | 1.1388 | 1.0392 | .9230 | .7828 |
| .300 | 1.6638 | 1.6272 | 1.5864 | 1.5410 | 1.4904 | 1.4346 | 1.3726 | 1.3034 | 1.2262 | 1.3458 | 1.1476 | 1.0468 | .9296 |
| .250 | 1.7148 | 1.6812 | 1.6434 | 1.6016 | 1.5552 | 1.5040 | 1.4472 | 1.3844 | 1.3142 | 1.3458 | 1.2456 | 1.1562 | 1.0544 |
| .200 | 1.7634 | 1.7326 | 1.6978 | 1.6596 | 1.6168 | 1.5692 | 1.5172 | 1.4594 | 1.3958 | 1.3248 | 1.2456 | 1.1562 | 1.0544 |
| .150 | 1.8104 | 1.7818 | 1.7500 | 1.7146 | 1.6750 | 1.6314 | 1.5834 | 1.5304 | 1.4716 | 1.4068 | 1.3352 | 1.2550 | 1.1648 |
| .100 | 1.8552 | 1.8294 | 1.8000 | 1.7672 | 1.7306 | 1.6906 | 1.6462 | 1.5972 | 1.5432 | 1.4832 | 1.4182 | 1.3456 | 1.2646 |
| .075 | 1.8772 | 1.8522 | 1.8242 | 1.7926 | 1.7576 | 1.7190 | 1.6764 | 1.6292 | 1.5774 | 1.5202 | 1.4576 | 1.3882 | 1.3110 |
| .050 | 1.8988 | 1.8750 | 1.8480 | 1.8178 | 1.7842 | 1.7470 | 1.7056 | 1.6602 | 1.6104 | 1.5556 | 1.4954 | 1.4290 | 1.3554 |
| .025 | 1.9198 | 1.8972 | 1.8712 | 1.8424 | 1.8098 | 1.7740 | 1.7344 | 1.6908 | 1.6428 | 1.5900 | 1.5324 | 1.4688 | 1.3982 |
| 0 | 1.9406 | 1.9190 | 1.8942 | 1.8664 | 1.8354 | 1.8008 | 1.7626 | 1.7206 | 1.6744 | 1.6238 | 1.5682 | 1.5072 | 1.4398 |
| -.025 | 1.9612 | 1.9404 | 1.9166 | 1.8900 | 1.8602 | 1.8270 | 1.7900 | 1.7496 | 1.7052 | 1.6564 | 1.6030 | 1.5444 | 1.4800 |
| -.050 | 1.9814 | 1.9616 | 1.9388 | 1.9132 | 1.8844 | 1.8522 | 1.8172 | 1.7784 | 1.7352 | 1.6882 | 1.6370 | 1.5804 | 1.5186 |
| -.075 | 2.0010 | 1.9822 | 1.9606 | 1.9362 | 1.9082 | 1.8774 | 1.8436 | 1.8060 | 1.7648 | 1.7194 | 1.6698 | 1.6156 | 1.5562 |
| -.100 | 2.0206 | 2.0026 | 1.9820 | 1.9584 | 1.9318 | 1.9022 | 1.8694 | 1.8334 | 1.7934 | 1.7498 | 1.7022 | 1.6500 | 1.5928 |
| -.150 | 2.0588 | 2.0424 | 2.0236 | 2.0002 | 1.9776 | 1.9502 | 1.9196 | 1.8862 | 1.8492 | 1.8086 | 1.7642 | 1.7158 | 1.6626 |
| -.200 | 2.0958 | 2.0812 | 2.0640 | 2.0424 | 2.0216 | 1.9964 | 1.9682 | 1.9370 | 1.9026 | 1.8648 | 1.8236 | 1.7784 | 1.7292 |
| -.250 | 2.1318 | 2.1186 | 2.1032 | 2.0840 | 2.0642 | 2.0410 | 2.0150 | 1.9862 | 1.9540 | 1.9186 | 1.8804 | 1.8380 | 1.7922 |
| -.300 | 2.1668 | 2.1552 | 2.1412 | 2.1246 | 2.1058 | 2.0842 | 2.0600 | 2.0334 | 2.0034 | 1.9706 | 1.9350 | 1.8958 | 1.8528 |
| -.400 | 2.2340 | 2.2254 | 2.2142 | 2.2008 | 2.1848 | 2.1668 | 2.1464 | 2.1234 | 2.0976 | 2.0690 | 2.0380 | 2.0036 | 1.9660 |
| -.500 | 2.2980 | 2.2918 | 2.2834 | 2.2730 | 2.2598 | 2.2450 | 2.2274 | 2.2078 | 2.1958 | 2.1812 | 2.1642 | 2.1442 | 2.1212 |
| -.600 | 2.3588 | 2.3552 | 2.3492 | 2.3412 | 2.3310 | 2.3186 | 2.3042 | 2.2878 | 2.2688 | 2.2476 | 2.2240 | 2.1978 | 2.1692 |
| -.700 | 2.4172 | 2.4156 | 2.4122 | 2.4064 | 2.3986 | 2.3888 | 2.3770 | 2.3634 | 2.3474 | 2.3292 | 2.3088 | 2.2862 | 2.2612 |
| -.800 | 2.4730 | 2.4734 | 2.4716 | 2.4686 | 2.4632 | 2.4556 | 2.4464 | 2.4354 | 2.4218 | 2.4064 | 2.3892 | 2.3696 | 2.3480 |

TABLE II - Continued

VALUES OF $2 \left(\frac{p_1}{p_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$

FOR DETERMINING POINT DRAG COEFFICIENT - Continued

 $[M_\infty = 0.95]$

| $\frac{\Delta H}{q_0} \backslash P_1$ | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.5074 | 1.5048 | 1.4976 | 1.4866 | 1.4710 | 1.4514 | 1.4270 | 1.3976 | 1.3632 | 1.3232 | 1.2768 | 1.2238 | 1.1630 | 1.0930 |
| .700 | 1.5696 | 1.5710 | 1.5684 | 1.5620 | 1.5518 | 1.5374 | 1.5192 | 1.4962 | 1.4690 | 1.4370 | 1.3998 | 1.3572 | 1.3082 | 1.2528 |
| .600 | 1.6276 | 1.6326 | 1.6340 | 1.6318 | 1.6262 | 1.6164 | 1.6032 | 1.5858 | 1.5648 | 1.5392 | 1.5094 | 1.4748 | 1.4350 | 1.3898 |
| .500 | 1.6818 | 1.6902 | 1.6950 | 1.6966 | 1.6946 | 1.6894 | 1.6806 | 1.6680 | 1.6520 | 1.6322 | 1.6082 | 1.5802 | 1.5478 | 1.5110 |
| .400 | 1.7328 | 1.7442 | 1.7524 | 1.7572 | 1.7588 | 1.7572 | 1.7524 | 1.7444 | 1.7326 | 1.7174 | 1.6988 | 1.6764 | 1.6498 | 1.6196 |
| .300 | 1.7808 | 1.7950 | 1.8060 | 1.8142 | 1.8190 | 1.8208 | 1.8194 | 1.8152 | 1.8072 | 1.7962 | 1.7820 | 1.7646 | 1.7432 | 1.7186 |
| .250 | 1.8038 | 1.8194 | 1.8320 | 1.8414 | 1.8476 | 1.8510 | 1.8514 | 1.8486 | 1.8428 | 1.8336 | 1.8214 | 1.8060 | 1.7872 | 1.7650 |
| .200 | 1.8262 | 1.8432 | 1.8570 | 1.8680 | 1.8754 | 1.8804 | 1.8822 | 1.8810 | 1.8770 | 1.8698 | 1.8596 | 1.8462 | 1.8294 | 1.8096 |
| .150 | 1.8482 | 1.8662 | 1.8812 | 1.8936 | 1.9026 | 1.9090 | 1.9124 | 1.9128 | 1.9104 | 1.9048 | 1.8962 | 1.8848 | 1.8698 | 1.8526 |
| .100 | 1.8694 | 1.8886 | 1.9052 | 1.9186 | 1.9292 | 1.9368 | 1.9414 | 1.9434 | 1.9424 | 1.9388 | 1.9320 | 1.9224 | 1.9096 | 1.8940 |
| .075 | 1.8800 | 1.8996 | 1.9168 | 1.9308 | 1.9420 | 1.9504 | 1.9558 | 1.9584 | 1.9580 | 1.9554 | 1.9494 | 1.9406 | 1.9290 | 1.9142 |
| .050 | 1.8902 | 1.9106 | 1.9282 | 1.9430 | 1.9548 | 1.9638 | 1.9698 | 1.9732 | 1.9736 | 1.9716 | 1.9666 | 1.9586 | 1.9478 | 1.9340 |
| .025 | 1.9004 | 1.9214 | 1.9396 | 1.9548 | 1.9674 | 1.9768 | 1.9838 | 1.9878 | 1.9892 | 1.9876 | 1.9834 | 1.9762 | 1.9664 | 1.9532 |
| 0 | 1.9104 | 1.9322 | 1.9508 | 1.9668 | 1.9798 | 1.9900 | 1.9976 | 2.0024 | 2.0044 | 2.0034 | 2.0002 | 1.9938 | 1.9848 | 1.9728 |
| -.025 | 1.9206 | 1.9426 | 1.9620 | 1.9784 | 1.9918 | 2.0028 | 2.0110 | 2.0164 | 2.0192 | 2.0192 | 2.0164 | 2.0110 | 2.0028 | 1.9916 |
| -.050 | 1.9304 | 1.9530 | 1.9730 | 1.9900 | 2.0040 | 2.0156 | 2.0244 | 2.0306 | 2.0338 | 2.0346 | 2.0326 | 2.0280 | 2.0204 | 2.0102 |
| -.075 | 1.9402 | 1.9634 | 1.9838 | 2.0014 | 2.0162 | 2.0282 | 2.0376 | 2.0444 | 2.0484 | 2.0498 | 2.0484 | 2.0446 | 2.0378 | 2.0286 |
| -.100 | 1.9498 | 1.9736 | 1.9944 | 2.0126 | 2.0280 | 2.0406 | 2.0506 | 2.0582 | 2.0626 | 2.0648 | 2.0640 | 2.0612 | 2.0552 | 2.0466 |
| -.150 | 1.9686 | 1.9938 | 2.0154 | 2.0348 | 2.0512 | 2.0650 | 2.0762 | 2.0848 | 2.0908 | 2.0942 | 2.0950 | 2.0934 | 2.0890 | 2.0820 |
| -.200 | 1.9876 | 2.0130 | 2.0360 | 2.0564 | 2.0738 | 2.0888 | 2.1012 | 2.1110 | 2.1182 | 2.1228 | 2.1250 | 2.1246 | 2.1214 | 2.1164 |
| -.250 | 2.0056 | 2.0324 | 2.0562 | 2.0776 | 2.0960 | 2.1122 | 2.1256 | 2.1366 | 2.1448 | 2.1508 | 2.1542 | 2.1550 | 2.1536 | 2.1496 |
| -.300 | 2.0234 | 2.0510 | 2.0768 | 2.0982 | 2.1178 | 2.1348 | 2.1494 | 2.1614 | 2.1710 | 2.1780 | 2.1826 | 2.1850 | 2.1846 | 2.1818 |
| -.400 | 2.0580 | 2.0862 | 2.1144 | 2.1384 | 2.1598 | 2.1788 | 2.1956 | 2.2096 | 2.2214 | 2.2306 | 2.2374 | 2.2424 | 2.2446 | 2.2418 |
| -.500 | 2.0916 | 2.1226 | 2.1510 | 2.1768 | 2.2004 | 2.2212 | 2.2398 | 2.2558 | 2.2696 | 2.2810 | 2.2902 | 2.2972 | 2.3018 | 2.3040 |
| -.600 | 2.1236 | 2.1564 | 2.1864 | 2.2140 | 2.2392 | 2.2618 | 2.2822 | 2.3000 | 2.3158 | 2.3294 | 2.3406 | 2.3496 | 2.3572 | 2.3608 |
| -.700 | 2.1546 | 2.1890 | 2.2204 | 2.2498 | 2.2764 | 2.3010 | 2.3228 | 2.3428 | 2.3602 | 2.3754 | 2.3888 | 2.3998 | 2.4082 | 2.4152 |
| -.800 | 2.1846 | 2.2204 | 2.2536 | 2.2844 | 2.3124 | 2.3386 | 2.3624 | 2.3838 | 2.4030 | 2.4198 | 2.4350 | 2.4480 | 2.4586 | 2.4672 |

| $\frac{\Delta H}{q_0} \backslash P_1$ | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|---------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.0120 | 0.9172 | 0.8034 | 0.6614 | 0.4654 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 1.1892 | 1.1168 | 1.0330 | .9354 | .8192 | 0.6738 | 0.4736 | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 1.3384 | 1.2804 | 1.2146 | 1.1396 | 1.0534 | .9532 | .8338 | 0.6854 | 0.4816 | ----- | ----- | ----- | ----- |
| .500 | 1.4686 | 1.4212 | 1.3676 | 1.3072 | 1.2392 | 1.1616 | 1.0726 | .9704 | .8486 | 0.6970 | 0.4894 | ----- | ----- |
| .400 | 1.5850 | 1.5456 | 1.5012 | 1.4512 | 1.3958 | 1.3330 | 1.2628 | 1.1832 | 1.0922 | .9874 | .8626 | 0.7080 | 0.4970 |
| .300 | 1.6898 | 1.6574 | 1.6204 | 1.5788 | 1.5324 | 1.4806 | 1.4228 | 1.3580 | 1.2856 | 1.2040 | 1.1108 | 1.0034 | .8764 |
| .250 | 1.7392 | 1.7092 | 1.6756 | 1.6374 | 1.5952 | 1.5476 | 1.4948 | 1.4358 | 1.3702 | 1.2966 | 1.2140 | 1.1198 | 1.0112 |
| .200 | 1.7860 | 1.7592 | 1.7284 | 1.6936 | 1.6548 | 1.6110 | 1.5628 | 1.5088 | 1.4488 | 1.3822 | 1.3080 | 1.2238 | 1.1288 |
| .150 | 1.8316 | 1.8076 | 1.7788 | 1.7470 | 1.7114 | 1.6714 | 1.6270 | 1.5774 | 1.5224 | 1.4618 | 1.3940 | 1.3184 | 1.2336 |
| .100 | 1.8752 | 1.8530 | 1.8274 | 1.7984 | 1.7656 | 1.7286 | 1.6878 | 1.6424 | 1.5918 | 1.5362 | 1.4744 | 1.4058 | 1.3292 |
| .075 | 1.8962 | 1.8754 | 1.8508 | 1.8230 | 1.7918 | 1.7564 | 1.7172 | 1.6734 | 1.6250 | 1.5716 | 1.5126 | 1.4468 | 1.3740 |
| .050 | 1.9172 | 1.8972 | 1.8740 | 1.8474 | 1.8176 | 1.7836 | 1.7460 | 1.7040 | 1.6576 | 1.6062 | 1.5496 | 1.4866 | 1.4172 |
| .025 | 1.9376 | 1.9188 | 1.8966 | 1.8712 | 1.8424 | 1.8100 | 1.7738 | 1.7338 | 1.6890 | 1.6398 | 1.5856 | 1.5252 | 1.4586 |
| 0 | 1.9578 | 1.9398 | 1.9188 | 1.8948 | 1.8672 | 1.8360 | 1.8014 | 1.7628 | 1.7198 | 1.6724 | 1.6202 | 1.5626 | 1.4988 |
| -.025 | 1.9772 | 1.9608 | 1.9408 | 1.9176 | 1.8914 | 1.8614 | 1.8282 | 1.7910 | 1.7500 | 1.7044 | 1.6542 | 1.5990 | 1.5380 |
| -.050 | 1.9970 | 1.9814 | 1.9622 | 1.9402 | 1.9150 | 1.8864 | 1.8546 | 1.8188 | 1.7794 | 1.7354 | 1.6872 | 1.6340 | 1.5754 |
| -.075 | 2.0162 | 2.0014 | 1.9832 | 1.9622 | 1.9384 | 1.9108 | 1.8802 | 1.8462 | 1.8078 | 1.7658 | 1.7194 | 1.6684 | 1.6122 |
| -.100 | 2.0352 | 2.0212 | 2.0040 | 1.9840 | 1.9612 | 1.9348 | 1.9056 | 1.8726 | 1.8358 | 1.7956 | 1.7508 | 1.7016 | 1.6476 |
| -.150 | 2.0722 | 2.0598 | 2.0444 | 2.0264 | 2.0056 | 1.9814 | 1.9546 | 1.9242 | 1.8904 | 1.8528 | 1.8114 | 1.7660 | 1.7158 |
| -.200 | 2.1080 | 2.0974 | 2.0838 | 2.0676 | 2.0488 | 2.0268 | 2.0020 | 1.9740 | 1.9426 | 1.9078 | 1.8696 | 1.8272 | 1.7806 |
| -.250 | 2.1430 | 2.1338 | 2.1218 | 2.1074 | 2.0904 | 2.0702 | 2.0476 | 2.0216 | 1.9928 | 1.9606 | 1.9252 | 1.8858 | 1.8424 |
| -.300 | 2.1770 | 2.1694 | 2.1588 | 2.1460 | 2.1310 | 2.1126 | 2.0920 | 2.0682 | 2.0416 | 2.0118 | 1.9786 | 1.9422 | 1.9020 |
| -.400 | 2.2418 | 2.2374 | 2.2300 | 2.2202 | 2.2082 | 2.1932 | 2.1762 | 2.1562 | 2.1336 | 2.1080 | 2.0798 | 2.0480 | 2.0132 |
| -.500 | 2.3040 | 2.3020 | 2.2972 | 2.2904 | 2.2812 | 2.2694 | 2.2554 | 2.2390 | 2.2198 | 2.1984 | 2.1738 | 2.1466 | 2.1166 |
| -.600 | 2.3630 | 2.3632 | 2.3612 | 2.3570 | 2.3506 | 2.3416 | 2.3308 | 2.3174 | 2.3016 | 2.2832 | 2.2626 | 2.2392 | 2.2130 |
| -.700 | 2.4196 | 2.4220 | 2.4222 | 2.4202 | 2.4166 | 2.4100 | 2.4018 | 2.3912 | 2.3784 | 2.3632 | 2.3460 | 2.3260 | 2.3036 |
| -.800 | 2.4736 | 2.4784 | 2.4806 | 2.4810 | 2.4794 | 2.4756 | 2.4698 | 2.4620 | 2.4516 | 2.4394 | 2.4250 | 2.4080 | 2.3886 |

TABLE II - Concluded

VALUES OF $2 \left(\frac{P_1}{P_2} \right)^{1/2} \left(\frac{q_1}{q_0} \right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Concluded

$$[M_o = 1.00]$$

| $\frac{\Delta H}{q_0}$ | P_1 | -0.50 | -0.45 | -0.40 | -0.35 | -0.30 | -0.25 | -0.20 | -0.15 | -0.10 | -0.05 | 0 | 0.05 | 0.10 | 0.15 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 1.4754 | 1.4802 | 1.4802 | 1.4762 | 1.4672 | 1.4536 | 1.4354 | 1.4118 | 1.3830 | 1.3488 | 1.3082 | 1.2610 | 1.2062 | 1.1430 | 1.0740 |
| .700 | 1.5330 | 1.5418 | 1.5464 | 1.5468 | 1.5432 | 1.5350 | 1.5224 | 1.5054 | 1.4836 | 1.4572 | 1.4254 | 1.3880 | 1.3446 | 1.2944 | 1.2400 |
| .600 | 1.5862 | 1.5992 | 1.6078 | 1.6122 | 1.6128 | 1.6096 | 1.6022 | 1.5904 | 1.5746 | 1.5544 | 1.5296 | 1.5002 | 1.4656 | 1.4254 | 1.3800 |
| .500 | 1.6364 | 1.6524 | 1.6646 | 1.6708 | 1.6778 | 1.6784 | 1.6756 | 1.6686 | 1.6578 | 1.6432 | 1.6244 | 1.6012 | 1.5736 | 1.5412 | 1.5040 |
| .400 | 1.6836 | 1.7024 | 1.7180 | 1.7298 | 1.7380 | 1.7426 | 1.7434 | 1.7406 | 1.7348 | 1.7218 | 1.7104 | 1.6934 | 1.6718 | 1.6456 | 1.6140 |
| .300 | 1.7278 | 1.7498 | 1.7684 | 1.7830 | 1.7946 | 1.8026 | 1.8070 | 1.8082 | 1.8058 | 1.8002 | 1.7908 | 1.7782 | 1.7616 | 1.7412 | 1.7158 |
| .250 | 1.7490 | 1.7724 | 1.7924 | 1.8088 | 1.8216 | 1.8312 | 1.8374 | 1.8402 | 1.8398 | 1.8360 | 1.8288 | 1.8180 | 1.8038 | 1.7858 | 1.7638 |
| .200 | 1.7698 | 1.7944 | 1.8156 | 1.8336 | 1.8480 | 1.8588 | 1.8668 | 1.8712 | 1.8724 | 1.8704 | 1.8652 | 1.8568 | 1.8446 | 1.8288 | 1.8094 |
| .150 | 1.7898 | 1.8160 | 1.8382 | 1.8576 | 1.8736 | 1.8860 | 1.8954 | 1.9016 | 1.9042 | 1.9040 | 1.9006 | 1.8938 | 1.8848 | 1.8704 | 1.8504 |
| .100 | 1.8096 | 1.8368 | 1.8602 | 1.8810 | 1.8984 | 1.9122 | 1.9230 | 1.9304 | 1.9352 | 1.9364 | 1.9346 | 1.9300 | 1.9218 | 1.9104 | 1.8940 |
| .075 | 1.8192 | 1.8472 | 1.8714 | 1.8924 | 1.9104 | 1.9252 | 1.9366 | 1.9448 | 1.9500 | 1.9522 | 1.9511 | 1.9482 | 1.9404 | 1.9298 | 1.9154 |
| .050 | 1.8288 | 1.8572 | 1.8820 | 1.9038 | 1.9224 | 1.9376 | 1.9500 | 1.9588 | 1.9650 | 1.9680 | 1.9678 | 1.9648 | 1.9586 | 1.9490 | 1.9360 |
| .025 | 1.8384 | 1.8674 | 1.8928 | 1.9150 | 1.9342 | 1.9502 | 1.9632 | 1.9728 | 1.9796 | 1.9832 | 1.9840 | 1.9818 | 1.9764 | 1.9680 | 1.9560 |
| 0 | 1.8476 | 1.8772 | 1.9036 | 1.9262 | 1.9460 | 1.9624 | 1.9760 | 1.9866 | 1.9940 | 1.9986 | 2.0000 | 1.9986 | 1.9940 | 1.9866 | 1.9760 |
| -.025 | 1.8574 | 1.8870 | 1.9138 | 1.9372 | 1.9576 | 1.9758 | 1.9886 | 1.9986 | 2.0062 | 2.0134 | 2.0202 | 2.0282 | 2.0312 | 2.0286 | 2.0228 |
| -.050 | 1.8660 | 1.8966 | 1.9240 | 1.9480 | 1.9688 | 1.9868 | 2.0016 | 2.0142 | 2.0268 | 2.0362 | 2.0428 | 2.0466 | 2.0474 | 2.0454 | 2.0404 |
| -.075 | 1.8748 | 1.9062 | 1.9342 | 1.9586 | 1.9802 | 1.9988 | 2.0142 | 2.0268 | 2.0396 | 2.0500 | 2.0574 | 2.0616 | 2.0632 | 2.0620 | 2.0578 |
| -.100 | 1.8838 | 1.9156 | 1.9440 | 1.9692 | 1.9914 | 2.0104 | 2.0264 | 2.0396 | 2.0522 | 2.0634 | 2.0722 | 2.0786 | 2.0826 | 2.0846 | 2.0818 |
| -.150 | 1.9014 | 1.9342 | 1.9634 | 1.9900 | 2.0130 | 2.0334 | 2.0508 | 2.0652 | 2.0786 | 2.0900 | 2.1000 | 2.1086 | 2.1142 | 2.1174 | 2.1154 |
| -.200 | 1.9186 | 1.9522 | 1.9830 | 2.0102 | 2.0346 | 2.0558 | 2.0744 | 2.0902 | 2.1030 | 2.1130 | 2.1200 | 2.1246 | 2.1274 | 2.1286 | 2.1288 |
| -.250 | 1.9354 | 1.9702 | 2.0026 | 2.0300 | 2.0556 | 2.0778 | 2.0976 | 2.1144 | 2.1286 | 2.1396 | 2.1482 | 2.1540 | 2.1574 | 2.1594 | 2.1598 |
| -.300 | 1.9518 | 1.9876 | 2.0200 | 2.0492 | 2.0762 | 2.0996 | 2.1204 | 2.1380 | 2.1534 | 2.1656 | 2.1754 | 2.1826 | 2.1872 | 2.1898 | 2.1898 |
| -.400 | 1.9836 | 2.0214 | 2.0558 | 2.0872 | 2.1156 | 2.1394 | 2.1604 | 2.1780 | 2.1934 | 2.2066 | 2.2174 | 2.2266 | 2.2338 | 2.2394 | 2.2430 |
| -.500 | 2.0114 | 2.0538 | 2.0900 | 2.1232 | 2.1536 | 2.1804 | 2.2044 | 2.2254 | 2.2430 | 2.2574 | 2.2694 | 2.2786 | 2.2858 | 2.2904 | 2.2934 |
| -.600 | 2.0440 | 2.0880 | 2.1252 | 2.1578 | 2.1902 | 2.2194 | 2.2454 | 2.2674 | 2.2854 | 2.3004 | 2.3124 | 2.3216 | 2.3286 | 2.3334 | 2.3364 |
| -.700 | 2.0726 | 2.1154 | 2.1546 | 2.1916 | 2.2252 | 2.2564 | 2.2834 | 2.3064 | 2.3254 | 2.3404 | 2.3524 | 2.3616 | 2.3686 | 2.3734 | 2.3764 |
| -.800 | 2.1002 | 2.1444 | 2.1854 | 2.2240 | 2.2592 | 2.2916 | 2.3220 | 2.3482 | 2.3748 | 2.3974 | 2.4176 | 2.4356 | 2.4512 | 2.4644 | 2.4744 |

| $\frac{\Delta H}{q_0}$ | P_1 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 | 0.45 | 0.50 | 0.55 | 0.60 | 0.65 | 0.70 | 0.75 | 0.80 |
|------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 0.800 | 1.0694 | 0.9836 | 0.8816 | 0.7572 | 0.5960 | 0.3526 | ----- | ----- | ----- | ----- | ----- | ----- | ----- | ----- |
| .700 | 1.2368 | 1.1706 | 1.0942 | 1.0054 | .9004 | .7726 | 0.6080 | 0.3592 | ----- | ----- | ----- | ----- | ----- | ----- |
| .600 | 1.3790 | 1.3262 | 1.2658 | 1.1968 | 1.1180 | 1.0264 | .9186 | .7876 | 0.6190 | 0.3656 | ----- | ----- | ----- | ----- |
| .500 | 1.5040 | 1.4610 | 1.4120 | 1.3570 | 1.2940 | 1.2224 | 1.1408 | 1.0464 | .9358 | .8020 | 0.6302 | 0.3718 | ----- | ----- |
| .400 | 1.6154 | 1.5806 | 1.5408 | 1.4954 | 1.4440 | 1.3864 | 1.3210 | 1.2470 | 1.1628 | 1.0662 | .9530 | .8160 | 0.6406 | ----- |
| .300 | 1.7166 | 1.6886 | 1.6556 | 1.6184 | 1.5760 | 1.5284 | 1.4746 | 1.4144 | 1.3470 | 1.2708 | 1.1844 | 1.0850 | .9690 | ----- |
| .250 | 1.7642 | 1.7388 | 1.7090 | 1.6750 | 1.6366 | 1.5932 | 1.5444 | 1.4894 | 1.4286 | 1.3596 | 1.2824 | 1.1946 | 1.0942 | ----- |
| .200 | 1.8098 | 1.7868 | 1.7602 | 1.7294 | 1.6942 | 1.6548 | 1.6102 | 1.5600 | 1.5042 | 1.4420 | 1.3724 | 1.2938 | 1.2050 | ----- |
| .150 | 1.8536 | 1.8332 | 1.8090 | 1.7810 | 1.7492 | 1.7130 | 1.6720 | 1.6266 | 1.5756 | 1.5188 | 1.4554 | 1.3844 | 1.3142 | ----- |
| .100 | 1.8956 | 1.8778 | 1.8558 | 1.8308 | 1.8018 | 1.7688 | 1.7316 | 1.6896 | 1.6430 | 1.5908 | 1.5330 | 1.4686 | 1.3966 | ----- |
| .075 | 1.9162 | 1.8994 | 1.8788 | 1.8548 | 1.8270 | 1.7956 | 1.7598 | 1.7198 | 1.6752 | 1.6254 | 1.5700 | 1.5084 | 1.4398 | ----- |
| .050 | 1.9364 | 1.9206 | 1.9010 | 1.8786 | 1.8520 | 1.8218 | 1.7878 | 1.7494 | 1.7066 | 1.6590 | 1.6056 | 1.5470 | 1.4816 | ----- |
| .025 | 1.9562 | 1.9414 | 1.9230 | 1.9018 | 1.8764 | 1.8476 | 1.8152 | 1.7784 | 1.7372 | 1.6916 | 1.6408 | 1.5842 | 1.5218 | ----- |
| 0 | 1.9758 | 1.9620 | 1.9448 | 1.9244 | 1.9004 | 1.8730 | 1.8418 | 1.8068 | 1.7672 | 1.7234 | 1.6746 | 1.6204 | 1.5608 | ----- |
| -.025 | 1.9948 | 1.9820 | 1.9658 | 1.9468 | 1.9240 | 1.8978 | 1.8680 | 1.8344 | 1.7964 | 1.7546 | 1.7076 | 1.6558 | 1.5986 | ----- |
| -.050 | 2.0138 | 2.0018 | 1.9868 | 1.9686 | 1.9470 | 1.9222 | 1.8936 | 1.8614 | 1.8252 | 1.7846 | 1.7398 | 1.6900 | 1.6350 | ----- |
| -.075 | 2.0322 | 2.0214 | 2.0076 | 1.9902 | 1.9698 | 1.9458 | 1.9188 | 1.8878 | 1.8534 | 1.8144 | 1.7710 | 1.7242 | 1.6708 | ----- |
| -.100 | 2.0508 | 2.0404 | 2.0276 | 2.0112 | 1.9920 | 1.9694 | 1.9432 | 1.9136 | 1.8806 | 1.8430 | 1.8016 | 1.7560 | 1.7054 | ----- |
| -.150 | 2.0866 | 2.0784 | 2.0668 | 2.0532 | 2.0352 | 2.0148 | 1.9912 | 1.9640 | 1.9338 | 1.8994 | 1.8612 | 1.8188 | 1.7720 | ----- |
| -.200 | 2.1214 | 2.1148 | 2.1050 | 2.0928 | 2.0772 | 2.0588 | 2.0374 | 2.0128 | 1.9848 | 1.9532 | 1.9180 | 1.8788 | 1.8352 | ----- |
| -.250 | 2.1550 | 2.1500 | 2.1420 | 2.1314 | 2.1178 | 2.1012 | 2.0822 | 2.0594 | 2.0338 | 2.0048 | 1.9724 | 1.9360 | 1.8960 | ----- |
| -.300 | 2.1878 | 2.1844 | 2.1780 | 2.1690 | 2.1574 | 2.1426 | 2.1252 | 2.1048 | 2.0814 | 2.0548 | 2.0246 | 1.9910 | 1.9542 | ----- |
| -.400 | 2.2508 | 2.2502 | 2.2472 | 2.2408 | 2.2326 | 2.2214 | 2.2074 | 2.1908 | 2.1716 | 2.1492 | 2.1236 | 2.0952 | 2.0634 | ----- |
| -.500 | 2.3112 | 2.3130 | 2.3122 | 2.3092 | 2.3038 | 2.2958 | 2.2852 | 2.2718 | 2.2562 | 2.2376 | 2.2160 | 2.1920 | 2.1666 | ----- |
| -.600 | 2.3682 | 2.3726 | 2.3746 | 2.3744 | 2.3712 | 2.3664 | 2.3586 | 2.3486 | 2.3360 | 2.3208 | 2.3024 | 2.2826 | 2.2592 | ----- |
| -.700 | 2.4230 | 2.4298 | 2.4338 | 2.4362 | 2.4358 | 2.4330 | 2.4286 | 2.4212 | 2.4116 | 2.3996 | 2.3848 | 2.3680 | 2.3484 | ----- |
| -.800 | 2.4752 | 2.4842 | 2.4906 | 2.4952 | 2.4972 | 2.4946 | 2.4904 | 2.4836 | 2.4744 | 2.4626 | 2.4486 | 2.4324 | 2.4144 | ----- |

TABLE III

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT

FOR FLOWS WHEREIN ENERGY IS ADDED

$[M_0 = 0]$

| $\frac{\Delta H}{q_0}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5528 | 0.5478 | 0.5430 | 0.5381 | 0.5287 | 0.5063 | 0.4853 | 0.4657 | 0.4472 | 0.4298 | 0.4134 | 0.3980 |
| .700 | .4523 | .4473 | .4425 | .4376 | .4282 | .4058 | .3848 | .3652 | .3467 | .3293 | .3129 | .2975 |
| .600 | .3675 | .3625 | .3577 | .3528 | .3434 | .3210 | .3000 | .2804 | .2619 | .2445 | .2281 | .2127 |
| .500 | .2929 | .2879 | .2831 | .2782 | .2688 | .2464 | .2254 | .2058 | .1873 | .1699 | .1535 | .1381 |
| .400 | .2254 | .2204 | .2156 | .2107 | .2013 | .1789 | .1579 | .1383 | .1198 | .1024 | .0860 | .0706 |
| .300 | .1633 | .1583 | .1535 | .1486 | .1392 | .1168 | .0958 | .0762 | .0577 | .0403 | .0239 | .0085 |
| .250 | .1340 | .1290 | .1242 | .1193 | .1099 | .0875 | .0665 | .0469 | .0284 | .0110 | -.0054 | -.0208 |
| .200 | .1056 | .1006 | .0958 | .0909 | .0815 | .0591 | .0381 | .0185 | 0 | -.0174 | -.0338 | -.0492 |
| .150 | .0780 | .0730 | .0682 | .0633 | .0539 | .0315 | .0105 | -.0091 | -.0276 | -.0450 | -.0614 | -.0768 |
| .100 | .0513 | .0463 | .0415 | .0366 | .0272 | .0048 | -.0162 | -.0358 | -.0543 | -.0717 | -.0881 | -.1035 |
| .075 | .0382 | .0332 | .0284 | .0235 | .0141 | -.0083 | -.0293 | -.0489 | -.0674 | -.0848 | -.1012 | -.1166 |
| .050 | .0253 | .0203 | .0155 | .0106 | .0012 | -.0212 | -.0422 | -.0618 | -.0803 | -.0977 | -.1141 | -.1295 |
| .025 | .0126 | .0076 | .0028 | -.0021 | -.0115 | -.0339 | -.0549 | -.0745 | -.0930 | -.1104 | -.1268 | -.1422 |
| 0 | 0 | -.0050 | -.0098 | -.0147 | -.0241 | -.0465 | -.0675 | -.0871 | -.1056 | -.1230 | -.1394 | -.1548 |
| -.025 | -.0124 | -.0174 | -.0222 | -.0271 | -.0365 | -.0589 | -.0799 | -.0995 | -.1180 | -.1354 | -.1518 | -.1672 |
| -.050 | -.0247 | -.0297 | -.0345 | -.0394 | -.0488 | -.0712 | -.0922 | -.1118 | -.1303 | -.1477 | -.1641 | -.1795 |
| -.075 | -.0368 | -.0418 | -.0466 | -.0515 | -.0609 | -.0833 | -.1043 | -.1239 | -.1424 | -.1598 | -.1762 | -.1916 |
| -.100 | -.0488 | -.0538 | -.0586 | -.0635 | -.0729 | -.0953 | -.1163 | -.1359 | -.1544 | -.1718 | -.1882 | -.2036 |
| -.150 | -.0723 | -.0773 | -.0821 | -.0870 | -.0964 | -.1188 | -.1398 | -.1594 | -.1779 | -.1953 | -.2117 | -.2271 |
| -.200 | -.0954 | -.1004 | -.1052 | -.1101 | -.1195 | -.1419 | -.1629 | -.1825 | -.2010 | -.2184 | -.2348 | -.2502 |
| -.250 | -.1180 | -.1230 | -.1278 | -.1327 | -.1421 | -.1645 | -.1855 | -.2051 | -.2236 | -.2410 | -.2574 | -.2728 |
| -.300 | -.1402 | -.1452 | -.1500 | -.1549 | -.1643 | -.1867 | -.2077 | -.2273 | -.2458 | -.2632 | -.2796 | -.2950 |
| -.400 | -.1832 | -.1882 | -.1930 | -.1979 | -.2073 | -.2297 | -.2507 | -.2703 | -.2888 | -.3062 | -.3226 | -.3380 |
| -.500 | -.2247 | -.2297 | -.2345 | -.2394 | -.2488 | -.2712 | -.2922 | -.3118 | -.3303 | -.3477 | -.3641 | -.3795 |
| -.600 | -.2649 | -.2699 | -.2747 | -.2796 | -.2890 | -.3114 | -.3324 | -.3520 | -.3705 | -.3879 | -.4043 | -.4197 |
| -.700 | -.3038 | -.3088 | -.3136 | -.3185 | -.3279 | -.3503 | -.3713 | -.3909 | -.4094 | -.4268 | -.4432 | -.4586 |
| -.800 | -.3416 | -.3466 | -.3514 | -.3563 | -.3657 | -.3881 | -.4091 | -.4287 | -.4472 | -.4646 | -.4810 | -.4964 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_0 = 0.05]$

| $\frac{\Delta H}{q_0}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5519 | 0.5469 | 0.5420 | 0.5372 | 0.5278 | 0.5054 | 0.4845 | 0.4648 | 0.4464 | 0.4290 | 0.4126 | 0.3971 |
| .700 | .4515 | .4466 | .4417 | .4369 | .4275 | .4051 | .3841 | .3644 | .3460 | .3287 | .3123 | .2968 |
| .600 | .3669 | .3620 | .3571 | .3523 | .3429 | .3205 | .2995 | .2798 | .2614 | .2441 | .2277 | .2122 |
| .500 | .2922 | .2872 | .2824 | .2775 | .2681 | .2457 | .2247 | .2051 | .1867 | .1693 | .1529 | .1374 |
| .400 | .2250 | .2200 | .2152 | .2103 | .2009 | .1785 | .1575 | .1379 | .1195 | .1021 | .0857 | .0702 |
| .300 | .1632 | .1582 | .1533 | .1485 | .1391 | .1166 | .0957 | .0761 | .0576 | .0402 | .0239 | .0084 |
| .250 | .1338 | .1289 | .1240 | .1192 | .1098 | .0873 | .0664 | .0468 | .0283 | .0109 | -.0054 | -.0209 |
| .200 | .1055 | .1005 | .0956 | .0908 | .0814 | .0589 | .0380 | .0184 | -.0001 | -.0175 | -.0338 | -.0493 |
| .150 | .0778 | .0729 | .0680 | .0632 | .0538 | .0313 | .0104 | -.0092 | -.0277 | -.0451 | -.0614 | -.0769 |
| .100 | .0513 | .0463 | .0415 | .0366 | .0272 | .0048 | -.0162 | -.0358 | -.0542 | -.0716 | -.0880 | -.1035 |
| .075 | .0382 | .0332 | .0284 | .0235 | .0141 | -.0083 | -.0293 | -.0489 | -.0673 | -.0847 | -.1011 | -.1166 |
| .050 | .0253 | .0203 | .0155 | .0106 | .0012 | -.0212 | -.0422 | -.0618 | -.0802 | -.0976 | -.1140 | -.1295 |
| .025 | .0126 | .0076 | .0028 | -.0021 | -.0115 | -.0339 | -.0549 | -.0745 | -.0929 | -.1103 | -.1267 | -.1422 |
| 0 | 0 | -.0050 | -.0098 | -.0147 | -.0241 | -.0465 | -.0675 | -.0871 | -.1055 | -.1229 | -.1393 | -.1548 |
| -.025 | -.0124 | -.0174 | -.0222 | -.0271 | -.0365 | -.0589 | -.0799 | -.0995 | -.1179 | -.1353 | -.1517 | -.1672 |
| -.050 | -.0247 | -.0296 | -.0344 | -.0393 | -.0487 | -.0711 | -.0921 | -.1117 | -.1301 | -.1475 | -.1639 | -.1794 |
| -.075 | -.0368 | -.0418 | -.0466 | -.0515 | -.0609 | -.0833 | -.1043 | -.1239 | -.1423 | -.1597 | -.1761 | -.1916 |
| -.100 | -.0488 | -.0538 | -.0586 | -.0635 | -.0729 | -.0953 | -.1163 | -.1359 | -.1543 | -.1717 | -.1881 | -.2036 |
| -.150 | -.0724 | -.0772 | -.0821 | -.0869 | -.0963 | -.1188 | -.1397 | -.1593 | -.1778 | -.1951 | -.2115 | -.2270 |
| -.200 | -.0953 | -.1003 | -.1052 | -.1100 | -.1194 | -.1419 | -.1628 | -.1824 | -.2009 | -.2182 | -.2346 | -.2501 |
| -.250 | -.1180 | -.1228 | -.1277 | -.1325 | -.1419 | -.1644 | -.1853 | -.2049 | -.2234 | -.2407 | -.2571 | -.2726 |
| -.300 | -.1398 | -.1448 | -.1497 | -.1545 | -.1639 | -.1864 | -.2073 | -.2269 | -.2454 | -.2627 | -.2791 | -.2946 |
| -.400 | -.1828 | -.1878 | -.1926 | -.1975 | -.2069 | -.2293 | -.2503 | -.2699 | -.2884 | -.3057 | -.3221 | -.3376 |
| -.500 | -.2243 | -.2293 | -.2341 | -.2390 | -.2484 | -.2708 | -.2918 | -.3114 | -.3299 | -.3472 | -.3636 | -.3791 |
| -.600 | -.2644 | -.2693 | -.2742 | -.2790 | -.2884 | -.3109 | -.3318 | -.3515 | -.3699 | -.3873 | -.4036 | -.4192 |
| -.700 | -.3033 | -.3082 | -.3131 | -.3179 | -.3273 | -.3498 | -.3707 | -.3904 | -.4088 | -.4262 | -.4425 | -.4581 |
| -.800 | -.3409 | -.3459 | -.3507 | -.3556 | -.3650 | -.3874 | -.4084 | -.4280 | -.4464 | -.4638 | -.4802 | -.4957 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.10]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5493 | 0.5443 | 0.5395 | 0.5347 | 0.5253 | 0.5029 | 0.4820 | 0.4624 | 0.4440 | 0.4266 | 0.4103 | 0.3948 |
| .700 | .4495 | .4445 | .4397 | .4349 | .4254 | .4031 | .3822 | .3626 | .3442 | .3268 | .3105 | .2950 |
| .600 | .3653 | .3603 | .3555 | .3507 | .3412 | .3189 | .2979 | .2784 | .2600 | .2427 | .2262 | .2108 |
| .500 | .2911 | .2861 | .2812 | .2765 | .2671 | .2446 | .2237 | .2042 | .1857 | .1684 | .1521 | .1366 |
| .400 | .2240 | .2190 | .2141 | .2094 | .2000 | .1776 | .1567 | .1370 | .1187 | .1013 | .0849 | .0694 |
| .300 | .1623 | .1573 | .1524 | .1476 | .1383 | .1159 | .0950 | .0753 | .0569 | .0396 | .0232 | .0078 |
| .250 | .1330 | .1281 | .1232 | .1184 | .1090 | .0866 | .0657 | .0461 | .0277 | .0103 | -.0060 | -.0215 |
| .200 | .1049 | .0999 | .0950 | .0902 | .0809 | .0585 | .0375 | .0180 | -.0005 | -.0178 | -.0342 | -.0497 |
| .150 | .0775 | .0726 | .0677 | .0629 | .0535 | .0311 | .0102 | -.0094 | -.0278 | -.0451 | -.0615 | -.0770 |
| .100 | .0510 | .0460 | .0412 | .0363 | .0270 | .0046 | -.0164 | -.0360 | -.0544 | -.0717 | -.0881 | -.1036 |
| .075 | .0380 | .0330 | .0281 | .0233 | .0139 | -.0085 | -.0294 | -.0490 | -.0675 | -.0848 | -.1011 | -.1167 |
| .050 | .0252 | .0202 | .0153 | .0105 | .0011 | -.0213 | -.0422 | -.0618 | -.0803 | -.0976 | -.1139 | -.1295 |
| .025 | .0125 | .0075 | .0027 | -.0022 | -.0115 | -.0339 | -.0549 | -.0745 | -.0929 | -.1102 | -.1266 | -.1421 |
| 0 | 0 | -.0050 | -.0098 | -.0147 | -.0240 | -.0464 | -.0674 | -.0870 | -.1054 | -.1227 | -.1391 | -.1546 |
| -.025 | -.0123 | -.0173 | -.0221 | -.0270 | -.0363 | -.0587 | -.0797 | -.0993 | -.1177 | -.1350 | -.1514 | -.1669 |
| -.050 | -.0246 | -.0295 | -.0344 | -.0392 | -.0486 | -.0710 | -.0919 | -.1115 | -.1299 | -.1473 | -.1637 | -.1791 |
| -.075 | -.0366 | -.0415 | -.0464 | -.0512 | -.0606 | -.0830 | -.1039 | -.1235 | -.1419 | -.1593 | -.1757 | -.1911 |
| -.100 | -.0485 | -.0535 | -.0583 | -.0632 | -.0725 | -.0950 | -.1159 | -.1355 | -.1539 | -.1713 | -.1876 | -.2031 |
| -.150 | -.0719 | -.0768 | -.0817 | -.0865 | -.0959 | -.1183 | -.1392 | -.1588 | -.1772 | -.1946 | -.2110 | -.2265 |
| -.200 | -.0947 | -.0997 | -.1045 | -.1094 | -.1187 | -.1412 | -.1621 | -.1817 | -.2001 | -.2175 | -.2339 | -.2493 |
| -.250 | -.1172 | -.1221 | -.1270 | -.1318 | -.1412 | -.1636 | -.1846 | -.2042 | -.2226 | -.2399 | -.2563 | -.2718 |
| -.300 | -.1391 | -.1441 | -.1489 | -.1538 | -.1632 | -.1856 | -.2065 | -.2261 | -.2445 | -.2619 | -.2782 | -.2938 |
| -.400 | -.1818 | -.1868 | -.1916 | -.1965 | -.2059 | -.2283 | -.2492 | -.2688 | -.2872 | -.3046 | -.3210 | -.3364 |
| -.500 | -.2230 | -.2280 | -.2328 | -.2377 | -.2471 | -.2695 | -.2904 | -.3100 | -.3285 | -.3458 | -.3622 | -.3777 |
| -.600 | -.2628 | -.2678 | -.2726 | -.2774 | -.2869 | -.3093 | -.3302 | -.3498 | -.3682 | -.3856 | -.4020 | -.4175 |
| -.700 | -.3014 | -.3064 | -.3112 | -.3160 | -.3255 | -.3479 | -.3688 | -.3884 | -.4069 | -.4242 | -.4406 | -.4561 |
| -.800 | -.3388 | -.3438 | -.3486 | -.3534 | -.3629 | -.3853 | -.4062 | -.4259 | -.4443 | -.4616 | -.4780 | -.4936 |

TABLE III - Continued

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VALUES OF $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_o = 0.15]$

| $\frac{\Delta H}{q_o} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5450 | 0.5401 | 0.5352 | 0.5304 | 0.5211 | 0.4987 | 0.4779 | 0.4584 | 0.4400 | 0.4228 | 0.4064 | 0.3910 |
| .700 | .4460 | .4411 | .4362 | .4315 | .4221 | .3998 | .3789 | .3594 | .3410 | .3237 | .3074 | .2920 |
| .600 | .3624 | .3575 | .3526 | .3479 | .3385 | .3162 | .2953 | .2758 | .2574 | .2401 | .2238 | .2084 |
| .500 | .2888 | .2839 | .2790 | .2742 | .2648 | .2425 | .2217 | .2021 | .1838 | .1664 | .1501 | .1346 |
| .400 | .2222 | .2173 | .2124 | .2076 | .1982 | .1759 | .1550 | .1355 | .1171 | .0998 | .0835 | .0680 |
| .300 | .1610 | .1561 | .1512 | .1464 | .1370 | .1147 | .0938 | .0743 | .0560 | .0386 | .0223 | .0069 |
| .250 | .1319 | .1270 | .1221 | .1173 | .1079 | .0857 | .0648 | .0452 | .0268 | .0095 | -.0068 | -.0223 |
| .200 | .1040 | .0991 | .0942 | .0894 | .0801 | .0577 | .0369 | .0173 | -.0011 | -.0184 | -.0347 | -.0502 |
| .150 | .0768 | .0719 | .0670 | .0622 | .0529 | .0305 | .0097 | -.0099 | -.0283 | -.0456 | -.0619 | -.0774 |
| .100 | .0506 | .0456 | .0408 | .0360 | .0266 | .0043 | -.0166 | -.0362 | -.0545 | -.0719 | -.0882 | -.1037 |
| .075 | .0376 | .0327 | .0279 | .0230 | .0137 | -.0087 | -.0297 | -.0491 | -.0675 | -.0848 | -.1012 | -.1166 |
| .050 | .0249 | .0199 | .0151 | .0103 | .0009 | -.0214 | -.0423 | -.0619 | -.0802 | -.0976 | -.1139 | -.1294 |
| .025 | .0124 | .0075 | .0027 | -.0022 | -.0115 | -.0339 | -.0548 | -.0743 | -.0927 | -.1100 | -.1264 | -.1419 |
| 0 | 0 | -.0050 | -.0098 | -.0146 | -.0240 | -.0463 | -.0672 | -.0868 | -.1052 | -.1225 | -.1388 | -.1543 |
| -.025 | -.0122 | -.0172 | -.0220 | -.0269 | -.0362 | -.0586 | -.0795 | -.0991 | -.1174 | -.1347 | -.1511 | -.1665 |
| -.050 | -.0243 | -.0293 | -.0341 | -.0389 | -.0483 | -.0707 | -.0916 | -.1111 | -.1295 | -.1468 | -.1632 | -.1786 |
| -.075 | -.0363 | -.0413 | -.0461 | -.0509 | -.0603 | -.0827 | -.1036 | -.1231 | -.1415 | -.1588 | -.1752 | -.1906 |
| -.100 | -.0485 | -.0535 | -.0583 | -.0631 | -.0725 | -.0949 | -.1157 | -.1353 | -.1537 | -.1710 | -.1874 | -.2028 |
| -.150 | -.0712 | -.0761 | -.0809 | -.0858 | -.0952 | -.1175 | -.1384 | -.1580 | -.1763 | -.1937 | -.2100 | -.2255 |
| -.200 | -.0939 | -.0988 | -.1036 | -.1085 | -.1179 | -.1402 | -.1611 | -.1807 | -.1991 | -.2164 | -.2327 | -.2483 |
| -.250 | -.1161 | -.1210 | -.1258 | -.1306 | -.1401 | -.1624 | -.1833 | -.2029 | -.2213 | -.2386 | -.2550 | -.2704 |
| -.300 | -.1379 | -.1428 | -.1476 | -.1524 | -.1619 | -.1842 | -.2051 | -.2247 | -.2431 | -.2604 | -.2768 | -.2923 |
| -.400 | -.1800 | -.1850 | -.1898 | -.1946 | -.2040 | -.2264 | -.2473 | -.2668 | -.2852 | -.3026 | -.3190 | -.3344 |
| -.500 | -.2207 | -.2257 | -.2305 | -.2353 | -.2447 | -.2671 | -.2880 | -.3076 | -.3260 | -.3433 | -.3597 | -.3752 |
| -.600 | -.2602 | -.2651 | -.2700 | -.2748 | -.2842 | -.3066 | -.3275 | -.3471 | -.3655 | -.3828 | -.3992 | -.4147 |
| -.700 | -.2983 | -.3032 | -.3081 | -.3129 | -.3223 | -.3447 | -.3656 | -.3852 | -.4036 | -.4209 | -.4373 | -.4528 |
| -.800 | -.3353 | -.3402 | -.3451 | -.3499 | -.3593 | -.3817 | -.4026 | -.4222 | -.4406 | -.4580 | -.4743 | -.4898 |

TABLE III - Continued

VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_0 = 0.20]$

| $\frac{\Delta H}{q_0}$ | κ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|------------------------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0 | 0.5390 | 0.5342 | 0.5293 | 0.5245 | 0.5152 | 0.4930 | 0.4723 | 0.4528 | 0.4346 | 0.4178 | 0.4010 | 0.3856 |
| .700 | | .4412 | .4364 | .4315 | .4268 | .4174 | .3952 | .3744 | .3550 | .3367 | .3194 | .3032 | .2878 |
| .600 | | .3585 | .3537 | .3488 | .3441 | .3347 | .3125 | .2917 | .2722 | .2539 | .2367 | .2204 | .2051 |
| .500 | | .2856 | .2807 | .2759 | .2711 | .2618 | .2395 | .2188 | .1993 | .1810 | .1638 | .1475 | .1321 |
| .400 | | .2197 | .2148 | .2100 | .2052 | .1959 | .1736 | .1529 | .1334 | .1151 | .0978 | .0815 | .0661 |
| .300 | | .1592 | .1543 | .1494 | .1447 | .1353 | .1131 | .0923 | .0728 | .0545 | .0372 | .0209 | .0055 |
| .250 | | .1305 | .1256 | .1207 | .1160 | .1066 | .0843 | .0635 | .0441 | .0258 | .0085 | -.0078 | -.0232 |
| .200 | | .1028 | .0979 | .0930 | .0883 | .0789 | .0566 | .0359 | .0163 | -.0020 | -.0192 | -.0355 | -.0509 |
| .150 | | .0760 | .0711 | .0662 | .0614 | .0521 | .0299 | .0090 | -.0105 | -.0288 | -.0461 | -.0623 | -.0778 |
| .100 | | .0499 | .0450 | .0401 | .0353 | .0260 | .0037 | -.0171 | -.0366 | -.0549 | -.0722 | -.0885 | -.1039 |
| .075 | | .0372 | .0323 | .0274 | .0226 | .0133 | -.0090 | -.0298 | -.0493 | -.0676 | -.0849 | -.1012 | -.1166 |
| .050 | | .0246 | .0197 | .0149 | .0100 | .0007 | -.0216 | -.0424 | -.0619 | -.0802 | -.0975 | -.1138 | -.1293 |
| .025 | | .0122 | .0073 | .0025 | -.0024 | -.0117 | -.0339 | -.0548 | -.0743 | -.0927 | -.1099 | -.1262 | -.1417 |
| 0 | 0 | 0 | -.0049 | -.0098 | -.0147 | -.0239 | -.0462 | -.0670 | -.0865 | -.1048 | -.1222 | -.1384 | -.1539 |
| -.025 | | -.0121 | -.0170 | -.0219 | -.0267 | -.0360 | -.0583 | -.0791 | -.0986 | -.1170 | -.1342 | -.1506 | -.1660 |
| -.050 | | -.0240 | -.0289 | -.0338 | -.0386 | -.0479 | -.0702 | -.0910 | -.1105 | -.1289 | -.1462 | -.1625 | -.1779 |
| -.075 | | -.0358 | -.0407 | -.0456 | -.0504 | -.0597 | -.0820 | -.1028 | -.1224 | -.1407 | -.1580 | -.1743 | -.1898 |
| -.100 | | -.0475 | -.0524 | -.0573 | -.0621 | -.0714 | -.0937 | -.1145 | -.1341 | -.1524 | -.1697 | -.1860 | -.2014 |
| -.150 | | -.0703 | -.0752 | -.0801 | -.0848 | -.0942 | -.1165 | -.1374 | -.1569 | -.1752 | -.1925 | -.2088 | -.2243 |
| -.200 | | -.0927 | -.0977 | -.1025 | -.1073 | -.1166 | -.1389 | -.1598 | -.1793 | -.1977 | -.2149 | -.2313 | -.2467 |
| -.250 | | -.1146 | -.1196 | -.1244 | -.1292 | -.1386 | -.1608 | -.1817 | -.2012 | -.2196 | -.2369 | -.2532 | -.2687 |
| -.300 | | -.1361 | -.1410 | -.1458 | -.1506 | -.1600 | -.1823 | -.2031 | -.2227 | -.2410 | -.2583 | -.2746 | -.2901 |
| -.400 | | -.1777 | -.1826 | -.1874 | -.1922 | -.2016 | -.2240 | -.2448 | -.2643 | -.2827 | -.3000 | -.3163 | -.3318 |
| -.500 | | -.2178 | -.2227 | -.2276 | -.2323 | -.2417 | -.2640 | -.2849 | -.3044 | -.3229 | -.3402 | -.3565 | -.3719 |
| -.600 | | -.2564 | -.2613 | -.2662 | -.2710 | -.2803 | -.3027 | -.3236 | -.3431 | -.3615 | -.3788 | -.3952 | -.4106 |
| -.700 | | -.2941 | -.2990 | -.3039 | -.3087 | -.3181 | -.3404 | -.3613 | -.3808 | -.3992 | -.4166 | -.4329 | -.4484 |
| -.800 | | -.3303 | -.3354 | -.3402 | -.3450 | -.3544 | -.3768 | -.3977 | -.4172 | -.4356 | -.4529 | -.4693 | -.4848 |

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_o = 0.25]$$

| $\frac{\Delta H}{q_o} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5314 | 0.5266 | 0.5217 | 0.5170 | 0.5077 | 0.4857 | 0.4650 | 0.4457 | 0.4275 | 0.4104 | 0.3941 | 0.3789 |
| .700 | .4352 | .4304 | .4256 | .4208 | .4115 | .3894 | .3688 | .3494 | .3312 | .3141 | .2979 | .2825 |
| .600 | .3537 | .3488 | .3440 | .3392 | .3300 | .3078 | .2872 | .2678 | .2496 | .2325 | .2163 | .2009 |
| .500 | .2817 | .2768 | .2720 | .2672 | .2579 | .2358 | .2151 | .1957 | .1775 | .1604 | .1441 | .1288 |
| .400 | .2166 | .2117 | .2069 | .2021 | .1928 | .1707 | .1500 | .1306 | .1124 | .0952 | .0789 | .0636 |
| .300 | .1567 | .1519 | .1470 | .1423 | .1330 | .1109 | .0902 | .0707 | .0525 | .0353 | .0191 | .0037 |
| .250 | .1286 | .1237 | .1189 | .1141 | .1048 | .0827 | .0620 | .0426 | .0243 | .0071 | -.0091 | -.0245 |
| .200 | .1012 | .0963 | .0915 | .0867 | .0774 | .0552 | .0345 | .0151 | -.0031 | -.0203 | -.0366 | -.0520 |
| .150 | .0748 | .0699 | .0651 | .0603 | .0510 | .0289 | .0081 | -.0113 | -.0293 | -.0467 | -.0630 | -.0784 |
| .100 | .0492 | .0443 | .0395 | .0347 | .0254 | .0032 | -.0175 | -.0369 | -.0552 | -.0724 | -.0887 | -.1040 |
| .075 | .0366 | .0317 | .0269 | .0222 | .0129 | -.0093 | -.0301 | -.0495 | -.0677 | -.0850 | -.1012 | -.1166 |
| .050 | .0243 | .0194 | .0145 | .0098 | .0005 | -.0217 | -.0424 | -.0618 | -.0801 | -.0973 | -.1136 | -.1290 |
| .025 | .0120 | .0071 | .0023 | -.0025 | -.0117 | -.0340 | -.0547 | -.0741 | -.0924 | -.1096 | -.1259 | -.1413 |
| 0 | 0 | -.0049 | -.0097 | -.0145 | -.0238 | -.0460 | -.0667 | -.0862 | -.1045 | -.1217 | -.1380 | -.1534 |
| -.025 | -.0119 | -.0168 | -.0216 | -.0264 | -.0357 | -.0579 | -.0786 | -.0981 | -.1163 | -.1335 | -.1499 | -.1652 |
| -.050 | -.0236 | -.0285 | -.0333 | -.0381 | -.0474 | -.0696 | -.0904 | -.1098 | -.1281 | -.1453 | -.1616 | -.1770 |
| -.075 | -.0353 | -.0402 | -.0450 | -.0497 | -.0591 | -.0813 | -.1021 | -.1215 | -.1398 | -.1570 | -.1733 | -.1886 |
| -.100 | -.0466 | -.0513 | -.0561 | -.0611 | -.0704 | -.0926 | -.1134 | -.1329 | -.1512 | -.1684 | -.1846 | -.2000 |
| -.150 | -.0692 | -.0741 | -.0789 | -.0837 | -.0931 | -.1153 | -.1360 | -.1555 | -.1738 | -.1910 | -.2073 | -.2227 |
| -.200 | -.0912 | -.0961 | -.1009 | -.1057 | -.1151 | -.1373 | -.1581 | -.1775 | -.1958 | -.2130 | -.2293 | -.2448 |
| -.250 | -.1127 | -.1176 | -.1225 | -.1272 | -.1365 | -.1588 | -.1796 | -.1990 | -.2173 | -.2346 | -.2509 | -.2663 |
| -.300 | -.1338 | -.1388 | -.1436 | -.1483 | -.1577 | -.1799 | -.2007 | -.2202 | -.2385 | -.2557 | -.2720 | -.2874 |
| -.400 | -.1748 | -.1797 | -.1845 | -.1893 | -.1986 | -.2209 | -.2416 | -.2611 | -.2794 | -.2967 | -.3130 | -.3285 |
| -.500 | -.2141 | -.2190 | -.2238 | -.2286 | -.2379 | -.2602 | -.2810 | -.3005 | -.3188 | -.3361 | -.3524 | -.3678 |
| -.600 | -.2521 | -.2570 | -.2618 | -.2666 | -.2760 | -.2982 | -.3190 | -.3385 | -.3569 | -.3742 | -.3905 | -.4060 |
| -.700 | -.2888 | -.2937 | -.2985 | -.3033 | -.3127 | -.3349 | -.3558 | -.3753 | -.3937 | -.4110 | -.4273 | -.4427 |
| -.800 | -.3244 | -.3293 | -.3342 | -.3389 | -.3483 | -.3706 | -.3914 | -.4109 | -.4293 | -.4467 | -.4630 | -.4785 |

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.30]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5224 | 0.5176 | 0.5128 | 0.5081 | 0.4989 | 0.4769 | 0.4564 | 0.4372 | 0.4191 | 0.4021 | 0.3860 | 0.3707 |
| .700 | .4280 | .4231 | .4184 | .4136 | .4045 | .3825 | .3620 | .3427 | .3246 | .3076 | .2914 | .2762 |
| .600 | .3477 | .3429 | .3381 | .3334 | .3241 | .3022 | .2817 | .2624 | .2443 | .2272 | .2111 | .1958 |
| .500 | .2769 | .2721 | .2673 | .2626 | .2533 | .2314 | .2108 | .1915 | .1734 | .1563 | .1402 | .1249 |
| .400 | .2129 | .2081 | .2033 | .1985 | .1893 | .1673 | .1467 | .1274 | .1093 | .0921 | .0760 | .0607 |
| .300 | .1540 | .1492 | .1444 | .1397 | .1304 | .1084 | .0878 | .0685 | .0503 | .0332 | .0170 | .0017 |
| .250 | .1263 | .1214 | .1166 | .1119 | .1027 | .0806 | .0600 | .0407 | .0225 | .0054 | -.0108 | -.0261 |
| .200 | .0995 | .0946 | .0898 | .0851 | .0758 | .0538 | .0332 | .0138 | -.0043 | -.0215 | -.0376 | -.0530 |
| .150 | .0734 | .0685 | .0637 | .0590 | .0497 | .0277 | .0071 | -.0122 | -.0304 | -.0476 | -.0637 | -.0791 |
| .100 | .0482 | .0434 | .0386 | .0338 | .0246 | .0025 | -.0181 | -.0374 | -.0556 | -.0728 | -.0890 | -.1043 |
| .075 | .0359 | .0311 | .0263 | .0215 | .0123 | -.0098 | -.0304 | -.0498 | -.0680 | -.0851 | -.1010 | -.1168 |
| .050 | .0237 | .0189 | .0141 | .0093 | .0001 | -.0220 | -.0426 | -.0620 | -.0802 | -.0973 | -.1135 | -.1289 |
| .025 | .0119 | .0070 | .0022 | -.0025 | -.0118 | -.0339 | -.0545 | -.0738 | -.0921 | -.1092 | -.1254 | -.1408 |
| 0 | 0 | -.0049 | -.0097 | -.0144 | -.0237 | -.0457 | -.0664 | -.0858 | -.1040 | -.1211 | -.1374 | -.1527 |
| -.025 | -.0117 | -.0166 | -.0214 | -.0261 | -.0354 | -.0575 | -.0781 | -.0975 | -.1157 | -.1329 | -.1491 | -.1644 |
| -.050 | -.0232 | -.0281 | -.0328 | -.0376 | -.0469 | -.0689 | -.0896 | -.1090 | -.1272 | -.1443 | -.1606 | -.1760 |
| -.075 | -.0346 | -.0395 | -.0442 | -.0490 | -.0583 | -.0803 | -.1010 | -.1204 | -.1386 | -.1558 | -.1720 | -.1874 |
| -.100 | -.0458 | -.0507 | -.0554 | -.0602 | -.0695 | -.0916 | -.1123 | -.1316 | -.1498 | -.1670 | -.1832 | -.1986 |
| -.150 | -.0678 | -.0727 | -.0775 | -.0822 | -.0916 | -.1136 | -.1343 | -.1537 | -.1719 | -.1892 | -.2053 | -.2207 |
| -.200 | -.0895 | -.0943 | -.0991 | -.1039 | -.1131 | -.1353 | -.1560 | -.1753 | -.1936 | -.2108 | -.2270 | -.2424 |
| -.250 | -.1105 | -.1154 | -.1202 | -.1249 | -.1342 | -.1564 | -.1770 | -.1965 | -.2147 | -.2319 | -.2481 | -.2635 |
| -.300 | -.1312 | -.1361 | -.1409 | -.1457 | -.1550 | -.1771 | -.1978 | -.2172 | -.2354 | -.2527 | -.2689 | -.2843 |
| -.400 | -.1712 | -.1761 | -.1809 | -.1856 | -.1950 | -.2171 | -.2378 | -.2572 | -.2755 | -.2927 | -.3090 | -.3244 |
| -.500 | -.2097 | -.2146 | -.2194 | -.2241 | -.2334 | -.2556 | -.2764 | -.2958 | -.3141 | -.3313 | -.3475 | -.3630 |
| -.600 | -.2467 | -.2516 | -.2564 | -.2612 | -.2705 | -.2927 | -.3135 | -.3329 | -.3512 | -.3685 | -.3848 | -.4002 |
| -.700 | -.2825 | -.2874 | -.2922 | -.2970 | -.3063 | -.3285 | -.3493 | -.3687 | -.3871 | -.4043 | -.4207 | -.4361 |
| -.800 | -.3173 | -.3222 | -.3271 | -.3318 | -.3411 | -.3634 | -.3842 | -.4036 | -.4220 | -.4393 | -.4556 | -.4710 |

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TABLE III - Continued

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VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_0 = 0.35$]

| $\frac{\Delta H}{q_0}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.5118 | 0.5070 | 0.5022 | 0.4975 | 0.4884 | 0.4667 | 0.4463 | 0.4272 | 0.4093 | 0.3923 | 0.3763 | 0.3612 |
| .700 | .4194 | .4146 | .4098 | .4052 | .3961 | .3743 | .3539 | .3348 | .3168 | .2999 | .2859 | .2687 |
| .600 | .3409 | .3361 | .3313 | .3267 | .3175 | .2957 | .2753 | .2562 | .2382 | .2212 | .2052 | .1900 |
| .500 | .2714 | .2665 | .2618 | .2571 | .2480 | .2262 | .2057 | .1866 | .1686 | .1516 | .1355 | .1203 |
| .400 | .2085 | .2037 | .1989 | .1943 | .1851 | .1633 | .1428 | .1236 | .1056 | .0886 | .0725 | .0573 |
| .300 | .1509 | .1461 | .1413 | .1366 | .1274 | .1055 | .0851 | .0658 | .0478 | .0308 | .0147 | -.0005 |
| .250 | .1236 | .1188 | .1141 | .1094 | .1002 | .0783 | .0578 | .0386 | .0205 | .0035 | -.0126 | -.0279 |
| .200 | .0973 | .0925 | .0877 | .0831 | .0739 | .0520 | .0315 | .0122 | -.0059 | -.0229 | -.0390 | -.0542 |
| .150 | .0719 | .0671 | .0623 | .0576 | .0484 | .0265 | .0060 | -.0133 | -.0314 | -.0484 | -.0645 | -.0798 |
| .100 | .0473 | .0424 | .0376 | .0330 | .0237 | .0018 | -.0187 | -.0379 | -.0561 | -.0731 | -.0892 | -.1045 |
| .075 | .0351 | .0305 | .0257 | .0210 | .0119 | -.0101 | -.0306 | -.0499 | -.0680 | -.0851 | -.1012 | -.1165 |
| .050 | .0232 | .0184 | .0136 | .0089 | -.0003 | -.0223 | -.0428 | -.0620 | -.0802 | -.0972 | -.1134 | -.1286 |
| .025 | .0116 | .0068 | .0020 | -.0027 | -.0119 | -.0339 | -.0544 | -.0737 | -.0918 | -.1089 | -.1250 | -.1403 |
| 0 | 0 | -.0049 | -.0096 | -.0144 | -.0235 | -.0455 | -.0660 | -.0853 | -.1035 | -.1205 | -.1366 | -.1519 |
| -.025 | -.0114 | -.0164 | -.0210 | -.0257 | -.0350 | -.0569 | -.0775 | -.0967 | -.1149 | -.1319 | -.1481 | -.1634 |
| -.050 | -.0226 | -.0275 | -.0322 | -.0369 | -.0462 | -.0682 | -.0887 | -.1080 | -.1261 | -.1432 | -.1594 | -.1747 |
| -.075 | -.0338 | -.0386 | -.0434 | -.0481 | -.0574 | -.0793 | -.0999 | -.1191 | -.1373 | -.1544 | -.1705 | -.1858 |
| -.100 | -.0447 | -.0495 | -.0543 | -.0590 | -.0683 | -.0902 | -.1108 | -.1301 | -.1482 | -.1653 | -.1815 | -.1968 |
| -.150 | -.0664 | -.0712 | -.0760 | -.0807 | -.0899 | -.1119 | -.1325 | -.1518 | -.1699 | -.1870 | -.2032 | -.2185 |
| -.200 | -.0869 | -.0917 | -.0965 | -.1012 | -.1105 | -.1324 | -.1530 | -.1724 | -.1905 | -.2076 | -.2238 | -.2392 |
| -.250 | -.1079 | -.1128 | -.1176 | -.1223 | -.1315 | -.1536 | -.1742 | -.1935 | -.2116 | -.2288 | -.2450 | -.2603 |
| -.300 | -.1281 | -.1329 | -.1377 | -.1424 | -.1517 | -.1737 | -.1943 | -.2136 | -.2318 | -.2490 | -.2651 | -.2805 |
| -.400 | -.1671 | -.1720 | -.1767 | -.1814 | -.1907 | -.2128 | -.2334 | -.2528 | -.2709 | -.2881 | -.3043 | -.3197 |
| -.500 | -.2045 | -.2093 | -.2141 | -.2188 | -.2281 | -.2502 | -.2709 | -.2902 | -.3084 | -.3256 | -.3419 | -.3572 |
| -.600 | -.2402 | -.2451 | -.2499 | -.2546 | -.2639 | -.2860 | -.3066 | -.3260 | -.3443 | -.3615 | -.3778 | -.3932 |
| -.700 | -.2755 | -.2804 | -.2852 | -.2900 | -.2992 | -.3214 | -.3421 | -.3614 | -.3798 | -.3970 | -.4133 | -.4286 |
| -.800 | -.3090 | -.3140 | -.3188 | -.3235 | -.3328 | -.3549 | -.3757 | -.3951 | -.4134 | -.4306 | -.4469 | -.4623 |

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NACA ARR No. L5H27

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_0 = 0.40$]

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4998 | 0.4951 | 0.4904 | 0.4858 | 0.4767 | 0.4552 | 0.4350 | 0.4160 | 0.3983 | 0.3815 | 0.3656 | 0.3506 |
| .700 | .4100 | .4052 | .4005 | .3959 | .3868 | .3652 | .3451 | .3261 | .3083 | .2914 | .2755 | .2605 |
| .600 | .3331 | .3283 | .3236 | .3190 | .3099 | .2883 | .2681 | .2491 | .2312 | .2144 | .1984 | .1833 |
| .500 | .2652 | .2604 | .2557 | .2510 | .2419 | .2203 | .2000 | .1810 | .1631 | .1462 | .1303 | .1152 |
| .400 | .2038 | .1990 | .1943 | .1896 | .1805 | .1589 | .1385 | .1195 | .1016 | .0847 | .0687 | .0536 |
| .300 | .1472 | .1425 | .1377 | .1331 | .1240 | .1022 | .0819 | .0628 | .0449 | .0280 | .0119 | -.0032 |
| .250 | .1206 | .1159 | .1112 | .1065 | .0974 | .0756 | .0553 | .0362 | .0184 | .0013 | -.0147 | -.0299 |
| .200 | .0950 | .0902 | .0855 | .0808 | .0717 | .0500 | .0296 | .0105 | -.0075 | -.0244 | -.0405 | -.0556 |
| .150 | .0701 | .0653 | .0606 | .0559 | .0468 | .0250 | .0047 | -.0145 | -.0323 | -.0494 | -.0654 | -.0806 |
| .100 | .0460 | .0412 | .0365 | .0318 | .0227 | .0009 | -.0194 | -.0386 | -.0566 | -.0736 | -.0896 | -.1048 |
| .075 | .0343 | .0295 | .0248 | .0201 | .0110 | -.0108 | -.0312 | -.0503 | -.0682 | -.0853 | -.1014 | -.1166 |
| .050 | .0227 | .0180 | .0132 | .0085 | -.0006 | -.0224 | -.0428 | -.0620 | -.0798 | -.0970 | -.1130 | -.1282 |
| .025 | .0112 | .0064 | .0017 | -.0030 | -.0121 | -.0339 | -.0543 | -.0735 | -.0913 | -.1085 | -.1246 | -.1398 |
| 0 | 0 | -.0048 | -.0095 | -.0143 | -.0234 | -.0452 | -.0656 | -.0847 | -.1028 | -.1198 | -.1359 | -.1511 |
| -.025 | -.0112 | -.0160 | -.0207 | -.0254 | -.0346 | -.0564 | -.0768 | -.0960 | -.1138 | -.1310 | -.1470 | -.1623 |
| -.050 | -.0221 | -.0269 | -.0316 | -.0363 | -.0455 | -.0673 | -.0877 | -.1069 | -.1247 | -.1419 | -.1580 | -.1733 |
| -.075 | -.0330 | -.0378 | -.0425 | -.0472 | -.0563 | -.0782 | -.0986 | -.1178 | -.1357 | -.1529 | -.1690 | -.1842 |
| -.100 | -.0436 | -.0484 | -.0532 | -.0578 | -.0669 | -.0889 | -.1093 | -.1285 | -.1465 | -.1635 | -.1797 | -.1949 |
| -.150 | -.0646 | -.0694 | -.0741 | -.0788 | -.0880 | -.1099 | -.1303 | -.1495 | -.1674 | -.1846 | -.2007 | -.2160 |
| -.200 | -.0851 | -.0899 | -.0946 | -.0993 | -.1085 | -.1304 | -.1508 | -.1701 | -.1881 | -.2052 | -.2213 | -.2365 |
| -.250 | -.1051 | -.1099 | -.1147 | -.1194 | -.1285 | -.1504 | -.1709 | -.1901 | -.2080 | -.2253 | -.2414 | -.2567 |
| -.300 | -.1247 | -.1295 | -.1342 | -.1390 | -.1481 | -.1700 | -.1906 | -.2098 | -.2278 | -.2449 | -.2611 | -.2764 |
| -.400 | -.1625 | -.1673 | -.1721 | -.1767 | -.1860 | -.2079 | -.2284 | -.2477 | -.2658 | -.2829 | -.2991 | -.3144 |
| -.500 | -.1989 | -.2038 | -.2085 | -.2132 | -.2224 | -.2444 | -.2649 | -.2843 | -.3024 | -.3195 | -.3357 | -.3510 |
| -.600 | -.2338 | -.2387 | -.2435 | -.2482 | -.2574 | -.2794 | -.3000 | -.3193 | -.3374 | -.3546 | -.3708 | -.3873 |
| -.700 | -.2674 | -.2723 | -.2771 | -.2818 | -.2910 | -.3131 | -.3337 | -.3531 | -.3713 | -.3884 | -.4046 | -.4200 |
| -.800 | -.3000 | -.3049 | -.3097 | -.3144 | -.3237 | -.3457 | -.3663 | -.3857 | -.4040 | -.4212 | -.4374 | -.4528 |

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.45]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4868 | 0.4821 | 0.4775 | 0.4729 | 0.4639 | 0.4426 | 0.4226 | 0.4039 | 0.3862 | 0.3695 | 0.3538 | 0.3389 |
| .700 | .3993 | .3945 | .3900 | .3853 | .3764 | .3550 | .3350 | .3162 | .2985 | .2818 | .2660 | .2511 |
| .600 | .3245 | .3198 | .3151 | .3105 | .3015 | .2801 | .2601 | .2412 | .2235 | .2068 | .1910 | .1760 |
| .500 | .2582 | .2535 | .2488 | .2442 | .2352 | .2138 | .1937 | .1748 | .1571 | .1403 | .1245 | .1095 |
| .400 | .1983 | .1936 | .1889 | .1843 | .1753 | .1538 | .1337 | .1148 | .0970 | .0802 | .0643 | .0493 |
| .300 | .1433 | .1386 | .1339 | .1293 | .1203 | .0988 | .0786 | .0596 | .0418 | .0250 | .0091 | -.0060 |
| .250 | .1174 | .1127 | .1080 | .1034 | .0943 | .0728 | .0526 | .0337 | .0158 | -.0010 | -.0169 | -.0320 |
| .200 | .0924 | .0877 | .0830 | .0784 | .0693 | .0477 | .0276 | .0086 | -.0093 | -.0261 | -.0420 | -.0571 |
| .150 | .0682 | .0635 | .0588 | .0542 | .0451 | .0235 | .0033 | -.0157 | -.0336 | -.0504 | -.0664 | -.0815 |
| .100 | .0448 | .0401 | .0354 | .0307 | .0217 | .0001 | -.0202 | -.0392 | -.0571 | -.0740 | -.0899 | -.1050 |
| .075 | .0333 | .0286 | .0239 | .0193 | .0102 | -.0114 | -.0317 | -.0507 | -.0686 | -.0855 | -.1014 | -.1165 |
| .050 | .0221 | .0174 | .0126 | .0080 | -.0010 | -.0227 | -.0429 | -.0620 | -.0798 | -.0967 | -.1127 | -.1278 |
| .025 | .0109 | .0062 | .0015 | -.0032 | -.0122 | -.0339 | -.0541 | -.0732 | -.0910 | -.1080 | -.1240 | -.1391 |
| 0 | 0 | -.0048 | -.0095 | -.0141 | -.0232 | -.0449 | -.0651 | -.0841 | -.1021 | -.1190 | -.1350 | -.1501 |
| -.025 | -.0109 | -.0157 | -.0203 | -.0250 | -.0341 | -.0557 | -.0760 | -.0951 | -.1130 | -.1299 | -.1459 | -.1611 |
| -.050 | -.0216 | -.0263 | -.0310 | -.0356 | -.0447 | -.0664 | -.0867 | -.1058 | -.1237 | -.1406 | -.1566 | -.1718 |
| -.075 | -.0320 | -.0368 | -.0415 | -.0461 | -.0552 | -.0769 | -.0972 | -.1162 | -.1342 | -.1511 | -.1672 | -.1823 |
| -.100 | -.0423 | -.0471 | -.0518 | -.0565 | -.0656 | -.0872 | -.1076 | -.1266 | -.1446 | -.1615 | -.1776 | -.1927 |
| -.150 | -.0627 | -.0675 | -.0722 | -.0768 | -.0859 | -.1076 | -.1280 | -.1470 | -.1650 | -.1820 | -.1980 | -.2132 |
| -.200 | -.0826 | -.0873 | -.0920 | -.0967 | -.1058 | -.1275 | -.1479 | -.1670 | -.1849 | -.2019 | -.2179 | -.2332 |
| -.250 | -.1020 | -.1068 | -.1115 | -.1161 | -.1252 | -.1470 | -.1674 | -.1865 | -.2045 | -.2214 | -.2375 | -.2527 |
| -.300 | -.1210 | -.1258 | -.1305 | -.1351 | -.1443 | -.1660 | -.1864 | -.2055 | -.2236 | -.2406 | -.2567 | -.2719 |
| -.400 | -.1576 | -.1624 | -.1672 | -.1718 | -.1809 | -.2028 | -.2232 | -.2423 | -.2604 | -.2774 | -.2935 | -.3088 |
| -.500 | -.1932 | -.1981 | -.2028 | -.2075 | -.2166 | -.2384 | -.2589 | -.2781 | -.2962 | -.3132 | -.3293 | -.3446 |
| -.600 | -.2265 | -.2313 | -.2361 | -.2407 | -.2499 | -.2718 | -.2922 | -.3115 | -.3296 | -.3466 | -.3628 | -.3781 |
| -.700 | -.2590 | -.2638 | -.2686 | -.2733 | -.2825 | -.3044 | -.3249 | -.3442 | -.3623 | -.3794 | -.3956 | -.4109 |
| -.800 | -.2903 | -.2952 | -.3000 | -.3047 | -.3138 | -.3358 | -.3563 | -.3756 | -.3938 | -.4109 | -.4271 | -.4425 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued $[M_0 = 0.50]$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4725 | 0.4679 | 0.4633 | 0.4588 | 0.4499 | 0.4289 | 0.4091 | 0.3905 | 0.3730 | 0.3566 | 0.3409 | 0.3261 |
| .700 | .3878 | .3832 | .3786 | .3741 | .3652 | .3440 | .3243 | .3056 | .2881 | .2716 | .2559 | .2411 |
| .600 | .3152 | .3105 | .3059 | .3013 | .2925 | .2713 | .2514 | .2328 | .2152 | .1986 | .1829 | .1681 |
| .500 | .2507 | .2460 | .2414 | .2369 | .2280 | .2069 | .1869 | .1681 | .1505 | .1339 | .1182 | .1033 |
| .400 | .1925 | .1878 | .1831 | .1786 | .1697 | .1484 | .1284 | .1097 | .0911 | .0753 | .0596 | .0447 |
| .300 | .1390 | .1343 | .1297 | .1251 | .1162 | .0949 | .0749 | .0561 | .0384 | .0217 | .0060 | .0090 |
| .250 | .1139 | .1092 | .1046 | .1001 | .0911 | .0697 | .0497 | .0309 | .0132 | -.0035 | -.0193 | -.0343 |
| .200 | .0896 | .0850 | .0803 | .0757 | .0668 | .0454 | .0254 | .0065 | -.0112 | -.0279 | -.0438 | -.0588 |
| .150 | .0661 | .0614 | .0567 | .0522 | .0432 | .0218 | .0017 | -.0171 | -.0349 | -.0516 | -.0675 | -.0825 |
| .100 | .0434 | .0387 | .0340 | .0294 | .0204 | -.0010 | -.0211 | -.0399 | -.0577 | -.0744 | -.0903 | -.1053 |
| .075 | .0323 | .0276 | .0229 | .0184 | .0093 | -.0121 | -.0322 | -.0510 | -.0688 | -.0856 | -.1015 | -.1165 |
| .050 | .0214 | .0167 | .0121 | .0075 | -.0015 | -.0230 | -.0430 | -.0620 | -.0797 | -.0965 | -.1124 | -.1274 |
| .025 | .0107 | .0059 | -.0013 | -.0033 | -.0123 | -.0338 | -.0539 | -.0728 | -.0906 | -.1073 | -.1232 | -.1383 |
| 0 | 0 | -.0047 | -.0094 | -.0140 | -.0230 | -.0445 | -.0646 | -.0835 | -.1013 | -.1181 | -.1340 | -.1491 |
| -.025 | -.0105 | -.0152 | -.0199 | -.0245 | -.0335 | -.0550 | -.0751 | -.0940 | -.1118 | -.1286 | -.1445 | -.1596 |
| -.050 | -.0208 | -.0255 | -.0301 | -.0347 | -.0438 | -.0652 | -.0854 | -.1043 | -.1221 | -.1390 | -.1549 | -.1699 |
| -.075 | -.0310 | -.0357 | -.0403 | -.0449 | -.0540 | -.0755 | -.0956 | -.1146 | -.1324 | -.1492 | -.1651 | -.1802 |
| -.100 | -.0412 | -.0460 | -.0506 | -.0552 | -.0643 | -.0858 | -.1059 | -.1249 | -.1427 | -.1596 | -.1755 | -.1905 |
| -.150 | -.0608 | -.0655 | -.0702 | -.0748 | -.0838 | -.1058 | -.1256 | -.1445 | -.1623 | -.1792 | -.1952 | -.2103 |
| -.200 | -.0799 | -.0847 | -.0894 | -.0939 | -.1030 | -.1246 | -.1448 | -.1638 | -.1816 | -.1985 | -.2144 | -.2296 |
| -.250 | -.0986 | -.1034 | -.1081 | -.1127 | -.1217 | -.1433 | -.1635 | -.1826 | -.2004 | -.2173 | -.2333 | -.2484 |
| -.300 | -.1170 | -.1218 | -.1265 | -.1311 | -.1401 | -.1617 | -.1820 | -.2010 | -.2189 | -.2358 | -.2518 | -.2669 |
| -.400 | -.1524 | -.1572 | -.1619 | -.1665 | -.1756 | -.1972 | -.2175 | -.2366 | -.2545 | -.2714 | -.2874 | -.3026 |
| -.500 | -.1863 | -.1911 | -.1958 | -.2004 | -.2095 | -.2312 | -.2515 | -.2706 | -.2886 | -.3055 | -.3216 | -.3368 |
| -.600 | -.2188 | -.2236 | -.2283 | -.2330 | -.2421 | -.2638 | -.2842 | -.3033 | -.3213 | -.3380 | -.3544 | -.3697 |
| -.700 | -.2501 | -.2548 | -.2596 | -.2642 | -.2734 | -.2952 | -.3156 | -.3347 | -.3528 | -.3698 | -.3859 | -.4012 |
| -.800 | -.2802 | -.2851 | -.2898 | -.2945 | -.3036 | -.3254 | -.3459 | -.3651 | -.3832 | -.4002 | -.4164 | -.4317 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_o = 0.55]$$

| $\frac{\Delta H}{q_o}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4572 | 0.4527 | 0.4481 | 0.4437 | 0.4350 | 0.4141 | 0.3946 | 0.3762 | 0.3589 | 0.3425 | 0.3271 | 0.3125 |
| .700 | .3755 | .3709 | .3664 | .3619 | .3532 | .3323 | .3127 | .2943 | .2769 | .2605 | .2451 | .2304 |
| .600 | .3051 | .3005 | .2959 | .2914 | .2827 | .2617 | .2421 | .2237 | .2062 | .1898 | .1742 | .1595 |
| .500 | .2427 | .2381 | .2336 | .2291 | .2203 | .1992 | .1796 | .1610 | .1436 | .1271 | .1115 | .0967 |
| .400 | .1862 | .1816 | .1771 | .1726 | .1637 | .1427 | .1229 | .1043 | .0868 | .0704 | .0547 | .0399 |
| .300 | .1346 | .1299 | .1253 | .1208 | .1119 | .0908 | .0710 | .0524 | .0348 | .0183 | .0026 | -.0122 |
| .250 | .1101 | .1054 | .1009 | .0963 | .0875 | .0663 | .0465 | .0279 | .0103 | -.0063 | -.0220 | -.0368 |
| .200 | .0862 | .0816 | .0770 | .0725 | .0636 | .0424 | .0225 | .0039 | -.0137 | -.0303 | -.0460 | -.0609 |
| .150 | .0639 | .0592 | .0546 | .0500 | .0412 | .0200 | .0001 | -.0186 | -.0362 | -.0528 | -.0685 | -.0835 |
| .100 | .0419 | .0372 | .0326 | .0281 | .0192 | -.0020 | -.0220 | -.0407 | -.0583 | -.0749 | -.0907 | -.1056 |
| .075 | .0311 | .0265 | .0219 | .0173 | .0084 | -.0128 | -.0327 | -.0515 | -.0691 | -.0858 | -.1015 | -.1164 |
| .050 | .0206 | .0160 | .0114 | .0068 | -.0021 | -.0233 | -.0433 | -.0620 | -.0796 | -.0963 | -.1121 | -.1270 |
| .025 | .0103 | .0056 | .0010 | -.0036 | -.0125 | -.0337 | -.0537 | -.0724 | -.0901 | -.1068 | -.1226 | -.1375 |
| 0 | 0 | -.0047 | -.0093 | -.0138 | -.0228 | -.0441 | -.0640 | -.0828 | -.1004 | -.1171 | -.1329 | -.1479 |
| -.025 | -.0101 | -.0148 | -.0194 | -.0239 | -.0329 | -.0541 | -.0741 | -.0929 | -.1106 | -.1273 | -.1431 | -.1581 |
| -.050 | -.0201 | -.0248 | -.0294 | -.0339 | -.0429 | -.0642 | -.0842 | -.1029 | -.1206 | -.1373 | -.1531 | -.1681 |
| -.075 | -.0300 | -.0347 | -.0393 | -.0438 | -.0528 | -.0741 | -.0941 | -.1129 | -.1306 | -.1473 | -.1631 | -.1781 |
| -.100 | -.0395 | -.0443 | -.0489 | -.0534 | -.0624 | -.0837 | -.1037 | -.1225 | -.1402 | -.1570 | -.1728 | -.1878 |
| -.150 | -.0586 | -.0636 | -.0680 | -.0726 | -.0815 | -.1028 | -.1229 | -.1417 | -.1594 | -.1762 | -.1920 | -.2070 |
| -.200 | -.0772 | -.0819 | -.0865 | -.0911 | -.1000 | -.1214 | -.1415 | -.1603 | -.1781 | -.1948 | -.2107 | -.2257 |
| -.250 | -.0951 | -.0999 | -.1045 | -.1091 | -.1180 | -.1394 | -.1595 | -.1784 | -.1962 | -.2129 | -.2288 | -.2439 |
| -.300 | -.1128 | -.1175 | -.1222 | -.1267 | -.1357 | -.1571 | -.1772 | -.1961 | -.2139 | -.2307 | -.2466 | -.2617 |
| -.400 | -.1468 | -.1516 | -.1562 | -.1608 | -.1698 | -.1913 | -.2115 | -.2304 | -.2482 | -.2651 | -.2810 | -.2961 |
| -.500 | -.1794 | -.1841 | -.1888 | -.1934 | -.2025 | -.2240 | -.2441 | -.2631 | -.2810 | -.2979 | -.3139 | -.3290 |
| -.600 | -.2106 | -.2153 | -.2201 | -.2247 | -.2337 | -.2553 | -.2755 | -.2945 | -.3125 | -.3294 | -.3454 | -.3606 |
| -.700 | -.2407 | -.2455 | -.2501 | -.2548 | -.2638 | -.2855 | -.3057 | -.3248 | -.3428 | -.3597 | -.3758 | -.3910 |
| -.800 | -.2696 | -.2743 | -.2790 | -.2837 | -.2928 | -.3144 | -.3348 | -.3539 | -.3718 | -.3889 | -.4050 | -.4202 |

TABLE III - Continued

VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.60]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4411 | 0.4366 | 0.4321 | 0.4277 | 0.4191 | 0.3986 | 0.3793 | 0.3612 | 0.3440 | 0.3279 | 0.3126 | 0.2980 |
| .700 | .3625 | .3579 | .3534 | .3491 | .3404 | .3198 | .3005 | .2822 | .2650 | .2488 | .2335 | .2190 |
| .600 | .2945 | .2899 | .2855 | .2811 | .2724 | .2517 | .2323 | .2140 | .1968 | .1805 | .1651 | .1505 |
| .500 | .2342 | .2297 | .2252 | .2208 | .2120 | .1913 | .1718 | .1535 | .1362 | .1199 | .1045 | .0898 |
| .400 | .1797 | .1751 | .1706 | .1662 | .1574 | .1366 | .1171 | .0987 | .0813 | .0650 | .0495 | .0348 |
| .300 | .1297 | .1251 | .1206 | .1161 | .1074 | .0865 | .0668 | .0484 | .0310 | .0146 | -.0009 | -.0157 |
| .250 | .1062 | .1016 | .0971 | .0926 | .0838 | .0629 | .0432 | .0248 | .0074 | -.0090 | -.0246 | -.0394 |
| .200 | .0834 | .0788 | .0743 | .0698 | .0611 | .0401 | .0204 | .0019 | -.0155 | -.0319 | -.0476 | -.0623 |
| .150 | .0616 | .0570 | .0525 | .0479 | .0391 | .0182 | -.0015 | -.0200 | -.0375 | -.0540 | -.0696 | -.0844 |
| .100 | .0404 | .0358 | .0313 | .0268 | .0180 | -.0030 | -.0227 | -.0413 | -.0588 | -.0753 | -.0909 | -.1058 |
| .075 | .0300 | .0254 | .0209 | .0164 | .0075 | -.0134 | -.0332 | -.0517 | -.0692 | -.0858 | -.1014 | -.1163 |
| .050 | .0199 | .0153 | .0107 | .0062 | -.0026 | -.0237 | -.0434 | -.0620 | -.0795 | -.0960 | -.1116 | -.1265 |
| .025 | .0099 | .0053 | .0007 | -.0038 | -.0126 | -.0337 | -.0535 | -.0720 | -.0895 | -.1061 | -.1218 | -.1366 |
| 0 | 0 | -.0046 | -.0092 | -.0137 | -.0226 | -.0436 | -.0634 | -.0820 | -.0995 | -.1161 | -.1317 | -.1466 |
| -.025 | -.0098 | -.0145 | -.0190 | -.0235 | -.0323 | -.0534 | -.0732 | -.0919 | -.1094 | -.1260 | -.1417 | -.1565 |
| -.050 | -.0194 | -.0241 | -.0286 | -.0331 | -.0420 | -.0631 | -.0829 | -.1015 | -.1190 | -.1356 | -.1513 | -.1662 |
| -.075 | -.0288 | -.0335 | -.0380 | -.0425 | -.0514 | -.0725 | -.0923 | -.1110 | -.1285 | -.1451 | -.1608 | -.1757 |
| -.100 | -.0380 | -.0427 | -.0472 | -.0518 | -.0606 | -.0817 | -.1015 | -.1202 | -.1378 | -.1544 | -.1701 | -.1851 |
| -.150 | -.0564 | -.0611 | -.0657 | -.0702 | -.0790 | -.1002 | -.1201 | -.1388 | -.1563 | -.1730 | -.1887 | -.2036 |
| -.200 | -.0743 | -.0789 | -.0835 | -.0880 | -.0969 | -.1181 | -.1380 | -.1567 | -.1743 | -.1910 | -.2068 | -.2217 |
| -.250 | -.0915 | -.0962 | -.1008 | -.1053 | -.1142 | -.1354 | -.1553 | -.1740 | -.1916 | -.2083 | -.2242 | -.2391 |
| -.300 | -.1084 | -.1131 | -.1177 | -.1223 | -.1312 | -.1524 | -.1723 | -.1911 | -.2088 | -.2255 | -.2413 | -.2563 |
| -.400 | -.1408 | -.1455 | -.1501 | -.1547 | -.1636 | -.1849 | -.2049 | -.2237 | -.2414 | -.2581 | -.2740 | -.2890 |
| -.500 | -.1722 | -.1769 | -.1816 | -.1861 | -.1951 | -.2164 | -.2365 | -.2553 | -.2731 | -.2899 | -.3057 | -.3208 |
| -.600 | -.2023 | -.2070 | -.2116 | -.2162 | -.2252 | -.2465 | -.2667 | -.2856 | -.3034 | -.3202 | -.3361 | -.3512 |
| -.700 | -.2309 | -.2356 | -.2403 | -.2449 | -.2539 | -.2754 | -.2955 | -.3145 | -.3323 | -.3492 | -.3651 | -.3803 |
| -.800 | -.2585 | -.2632 | -.2679 | -.2725 | -.2816 | -.3031 | -.3232 | -.3423 | -.3601 | -.3770 | -.3931 | -.4083 |

TABLE III - Continued

VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_0 = 0.65$]

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4242 | 0.4197 | 0.4153 | 0.4110 | 0.4025 | 0.3822 | 0.3632 | 0.3453 | 0.3284 | 0.3124 | 0.2973 | 0.2829 |
| .700 | .3488 | .3443 | .3399 | .3356 | .3271 | .3067 | .2876 | .2696 | .2526 | .2366 | .2214 | .2070 |
| .600 | .2834 | .2789 | .2745 | .2701 | .2616 | .2411 | .2220 | .2039 | .1869 | .1708 | .1556 | .1411 |
| .500 | .2253 | .2208 | .2163 | .2119 | .2034 | .1829 | .1636 | .1455 | .1284 | .1122 | .0969 | .0824 |
| .400 | .1729 | .1683 | .1639 | .1595 | .1509 | .1303 | .1110 | .0928 | .0757 | .0594 | .0441 | .0295 |
| .300 | .1248 | .1202 | .1158 | .1114 | .1027 | .0821 | .0627 | .0444 | .0272 | .0110 | -.0045 | -.0191 |
| .250 | .1021 | .0975 | .0931 | .0886 | .0799 | .0593 | .0398 | .0216 | .0043 | -.0120 | -.0274 | -.0420 |
| .200 | .0803 | .0758 | .0713 | .0669 | .0582 | .0374 | .0180 | -.0003 | -.0175 | -.0339 | -.0494 | -.0640 |
| .150 | .0591 | .0546 | .0501 | .0457 | .0370 | .0162 | -.0033 | -.0216 | -.0389 | -.0553 | -.0707 | -.0854 |
| .100 | .0388 | .0342 | .0297 | .0253 | .0166 | -.0042 | -.0237 | -.0421 | -.0594 | -.0758 | -.0913 | -.1060 |
| .075 | .0288 | .0242 | .0197 | .0153 | .0065 | -.0142 | -.0338 | -.0522 | -.0695 | -.0859 | -.1014 | -.1162 |
| .050 | .0191 | .0145 | .0100 | .0055 | -.0032 | -.0230 | -.0435 | -.0619 | -.0793 | -.0957 | -.1112 | -.1260 |
| .025 | .0095 | .0049 | .0005 | -.0040 | -.0128 | -.0338 | -.0532 | -.0715 | -.0889 | -.1053 | -.1209 | -.1357 |
| 0 | 0 | -.0046 | -.0091 | -.0135 | -.0223 | -.0431 | -.0627 | -.0811 | -.0985 | -.1150 | -.1305 | -.1453 |
| -.025 | -.0093 | -.0139 | -.0184 | -.0229 | -.0316 | -.0525 | -.0721 | -.0905 | -.1079 | -.1244 | -.1399 | -.1547 |
| -.050 | -.0187 | -.0232 | -.0277 | -.0322 | -.0410 | -.0619 | -.0815 | -.0999 | -.1173 | -.1337 | -.1494 | -.1642 |
| -.075 | -.0276 | -.0322 | -.0367 | -.0412 | -.0499 | -.0708 | -.0905 | -.1090 | -.1263 | -.1428 | -.1584 | -.1732 |
| -.100 | -.0366 | -.0412 | -.0458 | -.0502 | -.0590 | -.0799 | -.0995 | -.1180 | -.1355 | -.1519 | -.1676 | -.1824 |
| -.150 | -.0541 | -.0587 | -.0633 | -.0677 | -.0765 | -.0974 | -.1171 | -.1357 | -.1531 | -.1696 | -.1852 | -.2001 |
| -.200 | -.0712 | -.0758 | -.0803 | -.0848 | -.0936 | -.1146 | -.1345 | -.1528 | -.1703 | -.1868 | -.2025 | -.2173 |
| -.250 | -.0878 | -.0925 | -.0970 | -.1015 | -.1103 | -.1313 | -.1510 | -.1696 | -.1871 | -.2037 | -.2194 | -.2343 |
| -.300 | -.1040 | -.1087 | -.1132 | -.1177 | -.1265 | -.1476 | -.1673 | -.1859 | -.2035 | -.2200 | -.2357 | -.2507 |
| -.400 | -.1352 | -.1399 | -.1445 | -.1490 | -.1578 | -.1789 | -.1987 | -.2173 | -.2350 | -.2516 | -.2673 | -.2823 |
| -.500 | -.1660 | -.1707 | -.1753 | -.1798 | -.1886 | -.2098 | -.2297 | -.2484 | -.2660 | -.2827 | -.2985 | -.3135 |
| -.600 | -.1936 | -.1983 | -.2029 | -.2075 | -.2163 | -.2375 | -.2574 | -.2762 | -.2939 | -.3106 | -.3265 | -.3415 |
| -.700 | -.2210 | -.2257 | -.2303 | -.2348 | -.2438 | -.2651 | -.2850 | -.3039 | -.3216 | -.3384 | -.3543 | -.3693 |
| -.800 | -.2473 | -.2520 | -.2566 | -.2612 | -.2701 | -.2915 | -.3115 | -.3304 | -.3482 | -.3650 | -.3809 | -.3960 |

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TABLE III - Continued

VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

[$M_0 = 0.70$]

| $\frac{\Delta H}{q_0}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.4068 | 0.4024 | 0.3981 | 0.3938 | 0.3855 | 0.3655 | 0.3467 | 0.3290 | 0.3123 | 0.2966 | 0.2816 | 0.2674 |
| .700 | .3347 | .3303 | .3260 | .3217 | .3133 | .2932 | .2744 | .2566 | .2399 | .2240 | .2090 | .1947 |
| .600 | .2720 | .2676 | .2633 | .2590 | .2505 | .2304 | .2114 | .1936 | .1767 | .1608 | .1458 | .1314 |
| .500 | .2163 | .2119 | .2075 | .2032 | .1947 | .1745 | .1555 | .1376 | .1207 | .1047 | .0895 | .0752 |
| .400 | .1657 | .1613 | .1569 | .1526 | .1440 | .1237 | .1046 | .0866 | .0697 | .0537 | .0384 | .0239 |
| .300 | .1195 | .1151 | .1106 | .1063 | .0978 | .0774 | .0582 | .0402 | .0231 | .0070 | -.0083 | -.0227 |
| .250 | .0979 | .0934 | .0889 | .0846 | .0760 | .0556 | .0364 | .0183 | .0013 | -.0149 | -.0302 | -.0447 |
| .200 | .0769 | .0724 | .0680 | .0636 | .0550 | .0345 | .0153 | -.0028 | -.0199 | -.0361 | -.0514 | -.0660 |
| .150 | .0567 | .0522 | .0478 | .0434 | .0348 | .0143 | -.0049 | -.0231 | -.0402 | -.0564 | -.0718 | -.0864 |
| .100 | .0371 | .0326 | .0282 | .0238 | .0152 | -.0054 | -.0246 | -.0428 | -.0600 | -.0762 | -.0917 | -.1062 |
| .075 | .0277 | .0232 | .0187 | .0144 | .0057 | -.0148 | -.0341 | -.0523 | -.0695 | -.0857 | -.1012 | -.1158 |
| .050 | .0183 | .0138 | .0093 | .0049 | -.0037 | -.0242 | -.0436 | -.0618 | -.0790 | -.0953 | -.1106 | -.1253 |
| .025 | .0090 | .0045 | .0001 | -.0044 | -.0130 | -.0336 | -.0529 | -.0711 | -.0884 | -.1047 | -.1200 | -.1347 |
| 0 | 0 | -.0045 | -.0090 | -.0134 | -.0220 | -.0427 | -.0620 | -.0803 | -.0975 | -.1138 | -.1293 | -.1438 |
| -.025 | -.0091 | -.0136 | -.0180 | -.0224 | -.0311 | -.0517 | -.0711 | -.0894 | -.1066 | -.1229 | -.1383 | -.1530 |
| -.050 | -.0177 | -.0223 | -.0267 | -.0311 | -.0398 | -.0604 | -.0799 | -.0981 | -.1154 | -.1317 | -.1471 | -.1618 |
| -.075 | -.0265 | -.0310 | -.0355 | -.0399 | -.0485 | -.0692 | -.0886 | -.1069 | -.1242 | -.1405 | -.1560 | -.1707 |
| -.100 | -.0351 | -.0397 | -.0441 | -.0485 | -.0572 | -.0779 | -.0973 | -.1157 | -.1330 | -.1493 | -.1648 | -.1795 |
| -.150 | -.0518 | -.0563 | -.0608 | -.0652 | -.0739 | -.0947 | -.1141 | -.1324 | -.1498 | -.1662 | -.1817 | -.1964 |
| -.200 | -.0681 | -.0727 | -.0772 | -.0816 | -.0903 | -.1110 | -.1305 | -.1489 | -.1663 | -.1826 | -.1982 | -.2130 |
| -.250 | -.0840 | -.0886 | -.0931 | -.0975 | -.1062 | -.1270 | -.1466 | -.1649 | -.1823 | -.1987 | -.2143 | -.2291 |
| -.300 | -.0994 | -.1040 | -.1085 | -.1130 | -.1217 | -.1425 | -.1621 | -.1805 | -.1979 | -.2144 | -.2300 | -.2448 |
| -.400 | -.1292 | -.1338 | -.1384 | -.1428 | -.1515 | -.1724 | -.1921 | -.2106 | -.2280 | -.2445 | -.2602 | -.2750 |
| -.500 | -.1577 | -.1623 | -.1668 | -.1713 | -.1801 | -.2011 | -.2208 | -.2393 | -.2568 | -.2734 | -.2891 | -.3040 |
| -.600 | -.1849 | -.1896 | -.1941 | -.1986 | -.2074 | -.2284 | -.2482 | -.2668 | -.2844 | -.3010 | -.3168 | -.3317 |
| -.700 | -.2110 | -.2156 | -.2201 | -.2246 | -.2335 | -.2546 | -.2744 | -.2930 | -.3107 | -.3274 | -.3432 | -.3582 |
| -.800 | -.2360 | -.2406 | -.2452 | -.2497 | -.2586 | -.2798 | -.2996 | -.3183 | -.3360 | -.3527 | -.3686 | -.3836 |

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.75]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3888 | 0.3844 | 0.3802 | 0.3760 | 0.3678 | 0.3481 | 0.3296 | 0.3121 | 0.2957 | 0.2801 | 0.2653 | 0.2513 |
| .700 | .3201 | .3158 | .3115 | .3072 | .2990 | .2792 | .2606 | .2431 | .2266 | .2109 | .1960 | .1819 |
| .600 | .2597 | .2554 | .2511 | .2468 | .2385 | .2186 | .2000 | .1824 | .1657 | .1500 | .1351 | .1209 |
| .500 | .2068 | .2024 | .1981 | .1939 | .1855 | .1656 | .1468 | .1291 | .1124 | .0966 | .0816 | .0675 |
| .400 | .1585 | .1541 | .1498 | .1455 | .1371 | .1171 | .0982 | .0805 | .0637 | .0478 | .0328 | .0185 |
| .300 | .1144 | .1100 | .1056 | .1013 | .0929 | .0728 | .0538 | .0360 | .0191 | .0032 | -.0119 | -.0263 |
| .250 | .0935 | .0891 | .0847 | .0804 | .0720 | .0518 | .0329 | .0150 | -.0019 | -.0179 | -.0330 | -.0474 |
| .200 | .0735 | .0690 | .0647 | .0603 | .0519 | .0317 | .0126 | -.0053 | -.0222 | -.0382 | -.0534 | -.0678 |
| .150 | .0542 | .0497 | .0454 | .0411 | .0326 | .0123 | -.0067 | -.0247 | -.0416 | -.0577 | -.0729 | -.0873 |
| .100 | .0355 | .0310 | .0267 | .0223 | .0138 | -.0065 | -.0256 | -.0435 | -.0605 | -.0766 | -.0919 | -.1063 |
| .075 | .0264 | .0219 | .0175 | .0132 | .0047 | -.0156 | -.0348 | -.0527 | -.0698 | -.0858 | -.1011 | -.1156 |
| .050 | .0174 | .0130 | .0086 | .0043 | -.0042 | -.0246 | -.0437 | -.0617 | -.0787 | -.0948 | -.1101 | -.1246 |
| .025 | .0086 | .0041 | -.0002 | -.0046 | -.0131 | -.0335 | -.0526 | -.0707 | -.0877 | -.1038 | -.1191 | -.1336 |
| 0 | 0 | -.0045 | -.0089 | -.0132 | -.0217 | -.0421 | -.0613 | -.0793 | -.0964 | -.1125 | -.1278 | -.1424 |
| -.025 | -.0086 | -.0130 | -.0174 | -.0218 | -.0303 | -.0507 | -.0699 | -.0880 | -.1050 | -.1212 | -.1365 | -.1511 |
| -.050 | -.0170 | -.0215 | -.0259 | -.0302 | -.0387 | -.0592 | -.0784 | -.0965 | -.1135 | -.1297 | -.1451 | -.1596 |
| -.075 | -.0253 | -.0298 | -.0342 | -.0386 | -.0471 | -.0676 | -.0868 | -.1049 | -.1220 | -.1382 | -.1535 | -.1681 |
| -.100 | -.0335 | -.0380 | -.0424 | -.0467 | -.0553 | -.0757 | -.0950 | -.1131 | -.1302 | -.1464 | -.1617 | -.1764 |
| -.150 | -.0494 | -.0539 | -.0583 | -.0627 | -.0713 | -.0918 | -.1111 | -.1292 | -.1464 | -.1626 | -.1779 | -.1926 |
| -.200 | -.0650 | -.0696 | -.0740 | -.0784 | -.0870 | -.1075 | -.1268 | -.1450 | -.1622 | -.1784 | -.1939 | -.2085 |
| -.250 | -.0801 | -.0846 | -.0891 | -.0935 | -.1020 | -.1226 | -.1420 | -.1602 | -.1774 | -.1937 | -.2092 | -.2238 |
| -.300 | -.0949 | -.0994 | -.1038 | -.1083 | -.1169 | -.1375 | -.1568 | -.1751 | -.1924 | -.2087 | -.2242 | -.2389 |
| -.400 | -.1231 | -.1276 | -.1321 | -.1365 | -.1452 | -.1658 | -.1853 | -.2036 | -.2209 | -.2373 | -.2528 | -.2676 |
| -.500 | -.1504 | -.1549 | -.1594 | -.1638 | -.1725 | -.1933 | -.2128 | -.2311 | -.2485 | -.2649 | -.2805 | -.2953 |
| -.600 | -.1762 | -.1808 | -.1853 | -.1897 | -.1985 | -.2193 | -.2388 | -.2573 | -.2747 | -.2912 | -.3068 | -.3217 |
| -.700 | -.2011 | -.2057 | -.2102 | -.2146 | -.2234 | -.2443 | -.2639 | -.2824 | -.2999 | -.3164 | -.3320 | -.3470 |
| -.800 | -.2251 | -.2297 | -.2342 | -.2387 | -.2475 | -.2684 | -.2881 | -.3067 | -.3242 | -.3409 | -.3566 | -.3716 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_0 = 0.80]$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3706 | 0.3664 | 0.3622 | 0.3580 | 0.3500 | 0.3306 | 0.3124 | 0.2952 | 0.2789 | 0.2636 | 0.2490 | 0.2351 |
| .700 | .3053 | .3010 | .2968 | .2927 | .2845 | .2651 | .2468 | .2295 | .2131 | .1977 | .1830 | .1691 |
| .600 | .2483 | .2440 | .2398 | .2356 | .2274 | .2079 | .1894 | .1720 | .1556 | .1401 | .1253 | .1113 |
| .500 | .1973 | .1930 | .1888 | .1846 | .1764 | .1567 | .1382 | .1207 | .1042 | .0886 | .0738 | .0597 |
| .400 | .1513 | .1470 | .1427 | .1385 | .1302 | .1104 | .0918 | .0743 | .0577 | .0420 | .0271 | .0130 |
| .300 | .1091 | .1047 | .1005 | .0962 | .0879 | .0680 | .0493 | .0318 | .0151 | -.0007 | -.0157 | -.0299 |
| .250 | .0893 | .0849 | .0806 | .0764 | .0680 | .0482 | .0294 | .0117 | -.0050 | -.0208 | -.0357 | -.0500 |
| .200 | .0702 | .0658 | .0615 | .0572 | .0489 | .0290 | .0101 | -.0075 | -.0243 | -.0401 | -.0551 | -.0694 |
| .150 | .0516 | .0473 | .0429 | .0387 | .0303 | .0104 | -.0085 | -.0262 | -.0430 | -.0588 | -.0739 | -.0883 |
| .100 | .0338 | .0295 | .0251 | .0209 | .0125 | -.0076 | -.0264 | -.0442 | -.0610 | -.0769 | -.0920 | -.1064 |
| .075 | .0252 | .0208 | .0165 | .0122 | .0038 | -.0162 | -.0351 | -.0529 | -.0697 | -.0857 | -.1008 | -.1152 |
| .050 | .0166 | .0123 | .0079 | .0036 | -.0047 | -.0248 | -.0437 | -.0615 | -.0784 | -.0943 | -.1095 | -.1238 |
| .025 | .0082 | .0038 | -.0005 | -.0048 | -.0132 | -.0333 | -.0522 | -.0700 | -.0869 | -.1029 | -.1180 | -.1324 |
| 0 | 0 | -.0044 | -.0087 | -.0130 | -.0215 | -.0416 | -.0605 | -.0784 | -.0952 | -.1112 | -.1264 | -.1408 |
| -.025 | -.0082 | -.0126 | -.0169 | -.0212 | -.0296 | -.0498 | -.0687 | -.0866 | -.1035 | -.1195 | -.1347 | -.1491 |
| -.050 | -.0160 | -.0205 | -.0248 | -.0291 | -.0375 | -.0577 | -.0767 | -.0946 | -.1115 | -.1275 | -.1427 | -.1571 |
| -.075 | -.0240 | -.0284 | -.0328 | -.0371 | -.0455 | -.0657 | -.0847 | -.1026 | -.1195 | -.1356 | -.1508 | -.1652 |
| -.100 | -.0318 | -.0362 | -.0405 | -.0448 | -.0533 | -.0735 | -.0925 | -.1104 | -.1274 | -.1434 | -.1587 | -.1731 |
| -.150 | -.0470 | -.0515 | -.0558 | -.0601 | -.0686 | -.0888 | -.1079 | -.1259 | -.1429 | -.1589 | -.1742 | -.1887 |
| -.200 | -.0618 | -.0663 | -.0707 | -.0750 | -.0834 | -.1038 | -.1228 | -.1409 | -.1579 | -.1740 | -.1893 | -.2038 |
| -.250 | -.0762 | -.0807 | -.0851 | -.0894 | -.0979 | -.1182 | -.1373 | -.1554 | -.1725 | -.1886 | -.2039 | -.2185 |
| -.300 | -.0902 | -.0947 | -.0991 | -.1035 | -.1119 | -.1323 | -.1515 | -.1696 | -.1866 | -.2028 | -.2181 | -.2327 |
| -.400 | -.1172 | -.1217 | -.1261 | -.1305 | -.1390 | -.1594 | -.1787 | -.1968 | -.2139 | -.2302 | -.2456 | -.2603 |
| -.500 | -.1430 | -.1475 | -.1519 | -.1563 | -.1649 | -.1854 | -.2047 | -.2229 | -.2401 | -.2564 | -.2719 | -.2866 |
| -.600 | -.1676 | -.1721 | -.1766 | -.1810 | -.1896 | -.2102 | -.2295 | -.2478 | -.2651 | -.2814 | -.2970 | -.3117 |
| -.700 | -.1910 | -.1956 | -.2000 | -.2044 | -.2131 | -.2337 | -.2532 | -.2715 | -.2889 | -.3052 | -.3208 | -.3357 |
| -.800 | -.2136 | -.2181 | -.2226 | -.2270 | -.2357 | -.2565 | -.2760 | -.2944 | -.3118 | -.3282 | -.3439 | -.3587 |

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TABLE III - Continued

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VALUES OF $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$[M_o = 0.85]$

| $\frac{\Delta h}{q_o}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3521 | 0.3479 | 0.3439 | 0.3398 | 0.3318 | 0.3128 | 0.2949 | 0.2779 | 0.2619 | 0.2467 | 0.2323 | 0.2186 |
| .700 | .2902 | .2860 | .2819 | .2778 | .2698 | .2506 | .2326 | .2155 | .1994 | .1842 | .1697 | .1559 |
| .600 | .2361 | .2318 | .2277 | .2236 | .2155 | .1962 | .1781 | .1610 | .1448 | .1294 | .1148 | .1010 |
| .500 | .1876 | .1834 | .1792 | .1751 | .1669 | .1476 | .1294 | .1121 | .0958 | .0804 | .0657 | .0518 |
| .400 | .1438 | .1396 | .1354 | .1312 | .1231 | .1036 | .0852 | .0679 | .0516 | .0361 | .0213 | .0073 |
| .300 | .1037 | .0994 | .0952 | .0910 | .0829 | .0633 | .0448 | .0274 | .0110 | -.0046 | -.0194 | -.0335 |
| .250 | .0848 | .0806 | .0763 | .0722 | .0640 | .0443 | .0259 | .0084 | -.0081 | -.0237 | -.0386 | -.0527 |
| .200 | .0667 | .0624 | .0581 | .0539 | .0457 | .0260 | .0075 | -.0100 | -.0265 | -.0422 | -.0571 | -.0713 |
| .150 | .0491 | .0448 | .0406 | .0364 | .0281 | .0084 | -.0102 | -.0277 | -.0443 | -.0600 | -.0749 | -.0891 |
| .100 | .0322 | .0279 | .0237 | .0194 | .0112 | -.0086 | -.0272 | -.0448 | -.0614 | -.0771 | -.0921 | -.1063 |
| .075 | .0239 | .0196 | .0153 | .0111 | .0028 | -.0170 | -.0356 | -.0532 | -.0699 | -.0856 | -.1006 | -.1148 |
| .050 | .0158 | .0115 | .0072 | .0030 | -.0053 | -.0251 | -.0438 | -.0614 | -.0780 | -.0938 | -.1088 | -.1236 |
| .025 | .0077 | .0035 | -.0007 | -.0050 | -.0132 | -.0331 | -.0518 | -.0694 | -.0861 | -.1019 | -.1169 | -.1312 |
| 0 | 0 | -.0044 | -.0086 | -.0128 | -.0212 | -.0410 | -.0597 | -.0774 | -.0944 | -.1099 | -.1249 | -.1392 |
| -.025 | -.0078 | -.0121 | -.0164 | -.0206 | -.0290 | -.0488 | -.0676 | -.0852 | -.1019 | -.1178 | -.1328 | -.1471 |
| -.050 | -.0154 | -.0197 | -.0240 | -.0283 | -.0366 | -.0565 | -.0752 | -.0929 | -.1096 | -.1255 | -.1406 | -.1549 |
| -.075 | -.0229 | -.0272 | -.0315 | -.0357 | -.0441 | -.0640 | -.0827 | -.1005 | -.1171 | -.1331 | -.1481 | -.1625 |
| -.100 | -.0303 | -.0346 | -.0389 | -.0432 | -.0515 | -.0715 | -.0902 | -.1080 | -.1248 | -.1406 | -.1557 | -.1701 |
| -.150 | -.0447 | -.0491 | -.0534 | -.0576 | -.0660 | -.0860 | -.1048 | -.1225 | -.1394 | -.1553 | -.1704 | -.1848 |
| -.200 | -.0588 | -.0632 | -.0675 | -.0718 | -.0801 | -.1002 | -.1191 | -.1368 | -.1537 | -.1697 | -.1848 | -.1993 |
| -.250 | -.0725 | -.0769 | -.0812 | -.0855 | -.0939 | -.1140 | -.1329 | -.1507 | -.1676 | -.1836 | -.1988 | -.2132 |
| -.300 | -.0858 | -.0902 | -.0945 | -.0988 | -.1072 | -.1274 | -.1463 | -.1641 | -.1811 | -.1971 | -.2123 | -.2268 |
| -.400 | -.1113 | -.1157 | -.1201 | -.1244 | -.1328 | -.1530 | -.1721 | -.1900 | -.2070 | -.2230 | -.2383 | -.2528 |
| -.500 | -.1357 | -.1401 | -.1445 | -.1488 | -.1573 | -.1776 | -.1966 | -.2147 | -.2317 | -.2478 | -.2632 | -.2778 |
| -.600 | -.1590 | -.1635 | -.1679 | -.1722 | -.1807 | -.2011 | -.2203 | -.2383 | -.2554 | -.2717 | -.2870 | -.3017 |
| -.700 | -.1813 | -.1859 | -.1902 | -.1945 | -.2031 | -.2235 | -.2428 | -.2609 | -.2781 | -.2943 | -.3098 | -.3245 |
| -.800 | -.2025 | -.2070 | -.2114 | -.2158 | -.2244 | -.2449 | -.2642 | -.2824 | -.2997 | -.3160 | -.3315 | -.3463 |

TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$[M_0 = 0.90]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.3336 | 0.3296 | 0.3256 | 0.3215 | 0.3137 | 0.2950 | 0.2774 | 0.2606 | 0.2449 | 0.2299 | 0.2157 | 0.2022 |
| .700 | .2752 | .2711 | .2670 | .2630 | .2551 | .2363 | .2185 | .2017 | .1859 | .1708 | .1565 | .1428 |
| .600 | .2239 | .2198 | .2157 | .2116 | .2037 | .1847 | .1669 | .1500 | .1340 | .1188 | .1044 | .0907 |
| .500 | .1780 | .1738 | .1697 | .1657 | .1577 | .1386 | .1206 | .1036 | .0876 | .0723 | .0578 | .0441 |
| .400 | .1364 | .1322 | .1281 | .1240 | .1160 | .0968 | .0787 | .0616 | .0455 | .0301 | .0156 | .0017 |
| .300 | .0983 | .0942 | .0900 | .0859 | .0778 | .0585 | .0403 | .0232 | .0069 | -.0085 | -.0231 | -.0371 |
| .250 | .0805 | .0763 | .0721 | .0680 | .0599 | .0405 | .0223 | .0051 | -.0112 | -.0266 | -.0414 | -.0553 |
| .200 | .0634 | .0591 | .0550 | .0508 | .0427 | .0234 | .0051 | -.0122 | -.0285 | -.0440 | -.0587 | -.0727 |
| .150 | .0466 | .0423 | .0381 | .0340 | .0259 | .0064 | -.0119 | -.0292 | -.0456 | -.0611 | -.0759 | -.0899 |
| .100 | .0305 | .0263 | .0221 | .0179 | .0097 | -.0097 | -.0281 | -.0454 | -.0619 | -.0774 | -.0922 | -.1063 |
| .075 | .0227 | .0184 | .0142 | .0101 | .0019 | -.0176 | -.0360 | -.0534 | -.0698 | -.0854 | -.1002 | -.1143 |
| .050 | .0150 | .0107 | .0065 | .0023 | -.0058 | -.0254 | -.0438 | -.0612 | -.0776 | -.0932 | -.1081 | -.1222 |
| .025 | .0073 | .0031 | -.0011 | -.0052 | -.0134 | -.0330 | -.0515 | -.0688 | -.0853 | -.1010 | -.1158 | -.1299 |
| 0 | 0 | -.0043 | -.0085 | -.0127 | -.0209 | -.0404 | -.0589 | -.0763 | -.0929 | -.1085 | -.1234 | -.1375 |
| -.025 | -.0074 | -.0117 | -.0159 | -.0201 | -.0282 | -.0479 | -.0664 | -.0838 | -.1004 | -.1160 | -.1309 | -.1451 |
| -.050 | -.0146 | -.0189 | -.0231 | -.0273 | -.0355 | -.0551 | -.0737 | -.0911 | -.1077 | -.1234 | -.1383 | -.1524 |
| -.075 | -.0217 | -.0260 | -.0302 | -.0343 | -.0426 | -.0622 | -.0807 | -.0982 | -.1148 | -.1305 | -.1454 | -.1596 |
| -.100 | -.0287 | -.0330 | -.0372 | -.0414 | -.0496 | -.0693 | -.0879 | -.1054 | -.1220 | -.1377 | -.1526 | -.1668 |
| -.150 | -.0425 | -.0468 | -.0510 | -.0552 | -.0634 | -.0832 | -.1018 | -.1193 | -.1359 | -.1517 | -.1667 | -.1809 |
| -.200 | -.0556 | -.0599 | -.0642 | -.0684 | -.0767 | -.0964 | -.1151 | -.1326 | -.1493 | -.1651 | -.1801 | -.1944 |
| -.250 | -.0687 | -.0730 | -.0773 | -.0815 | -.0897 | -.1095 | -.1283 | -.1459 | -.1625 | -.1784 | -.1934 | -.2077 |
| -.300 | -.0812 | -.0856 | -.0899 | -.0941 | -.1024 | -.1222 | -.1410 | -.1586 | -.1754 | -.1912 | -.2063 | -.2206 |
| -.400 | -.1056 | -.1099 | -.1142 | -.1185 | -.1268 | -.1467 | -.1655 | -.1833 | -.2001 | -.2160 | -.2312 | -.2456 |
| -.500 | -.1286 | -.1330 | -.1373 | -.1415 | -.1500 | -.1700 | -.1888 | -.2066 | -.2235 | -.2395 | -.2547 | -.2692 |
| -.600 | -.1506 | -.1550 | -.1593 | -.1636 | -.1720 | -.1921 | -.2111 | -.2289 | -.2459 | -.2619 | -.2772 | -.2917 |
| -.700 | -.1716 | -.1760 | -.1804 | -.1847 | -.1931 | -.2133 | -.2324 | -.2503 | -.2673 | -.2835 | -.2988 | -.3133 |
| -.800 | -.1919 | -.1963 | -.2007 | -.2050 | -.2134 | -.2337 | -.2528 | -.2708 | -.2879 | -.3041 | -.3195 | -.3341 |

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TABLE III - Continued

VALUES OF $\left(\frac{p_2}{p_o}\right)^{1/2} - \left(\frac{q_2}{q_o}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Continued

$$M_o = 0.95$$

| $\frac{\Delta h}{q_o}$ \ K | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|----------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|
| 0.800 | 0.3152 | 0.3112 | 0.3073 | 0.3034 | 0.2957 | 0.2772 | 0.2599 | 0.2435 | 0.2279 | 0.2132 | 0.1992 | -0.1858 |
| .700 | .2603 | .2562 | .2523 | .2483 | .2406 | .2221 | .2045 | .1880 | .1723 | .1575 | .1434 | .1299 |
| .600 | .2118 | .2077 | .2037 | .1998 | .1920 | .1734 | .1557 | .1391 | .1233 | .1084 | .0941 | .0806 |
| .500 | .1685 | .1644 | .1604 | .1564 | .1485 | .1298 | .1120 | .0953 | .0794 | .0644 | .0501 | .0364 |
| .400 | .1291 | .1249 | .1209 | .1169 | .1090 | .0901 | .0722 | .0554 | .0395 | .0243 | .0100 | -.0038 |
| .300 | .0931 | .0889 | .0849 | .0808 | .0729 | .0539 | .0360 | .0191 | .0030 | -.0123 | -.0271 | -.0405 |
| .250 | .0762 | .0720 | .0679 | .0639 | .0559 | .0369 | .0189 | .0019 | -.0142 | -.0295 | -.0440 | -.0578 |
| .200 | .0597 | .0556 | .0515 | .0474 | .0394 | .0204 | .0023 | -.0147 | -.0309 | -.0462 | -.0607 | -.0746 |
| .150 | .0441 | .0399 | .0358 | .0317 | .0237 | .0045 | -.0135 | -.0306 | -.0468 | -.0621 | -.0768 | -.0906 |
| .100 | .0288 | .0247 | .0206 | .0164 | .0084 | -.0108 | -.0289 | -.0460 | -.0622 | -.0776 | -.0923 | -.1062 |
| .075 | .0215 | .0173 | .0131 | .0091 | .0011 | -.0182 | -.0364 | -.0535 | -.0698 | -.0851 | -.0998 | -.1138 |
| .050 | .0141 | .0100 | .0058 | .0017 | -.0063 | -.0256 | -.0437 | -.0609 | -.0772 | -.0926 | -.1073 | -.1213 |
| .025 | .0070 | .0028 | -.0013 | -.0054 | -.0135 | -.0327 | -.0510 | -.0681 | -.0845 | -.0999 | -.1145 | -.1286 |
| 0 | 0 | -.0042 | -.0084 | -.0125 | -.0205 | -.0398 | -.0580 | -.0753 | -.0916 | -.1070 | -.1218 | -.1358 |
| -.025 | -.0070 | -.0112 | -.0153 | -.0194 | -.0275 | -.0468 | -.0651 | -.0823 | -.0986 | -.1141 | -.1288 | -.1429 |
| -.050 | -.0138 | -.0180 | -.0222 | -.0263 | -.0344 | -.0538 | -.0720 | -.0893 | -.1056 | -.1211 | -.1358 | -.1499 |
| -.075 | -.0205 | -.0247 | -.0289 | -.0330 | -.0411 | -.0605 | -.0787 | -.0960 | -.1124 | -.1279 | -.1427 | -.1567 |
| -.100 | -.0270 | -.0313 | -.0354 | -.0395 | -.0477 | -.0671 | -.0854 | -.1026 | -.1190 | -.1346 | -.1494 | -.1634 |
| -.150 | -.0401 | -.0444 | -.0486 | -.0527 | -.0608 | -.0802 | -.0986 | -.1159 | -.1323 | -.1479 | -.1627 | -.1769 |
| -.200 | -.0527 | -.0569 | -.0612 | -.0653 | -.0734 | -.0929 | -.1113 | -.1287 | -.1452 | -.1608 | -.1757 | -.1897 |
| -.250 | -.0649 | -.0692 | -.0734 | -.0776 | -.0857 | -.1052 | -.1237 | -.1411 | -.1576 | -.1733 | -.1882 | -.2023 |
| -.300 | -.0768 | -.0811 | -.0853 | -.0895 | -.0976 | -.1172 | -.1357 | -.1532 | -.1697 | -.1854 | -.2003 | -.2145 |
| -.400 | -.0998 | -.1041 | -.1084 | -.1125 | -.1208 | -.1404 | -.1590 | -.1765 | -.1932 | -.2089 | -.2239 | -.2382 |
| -.500 | -.1216 | -.1259 | -.1302 | -.1344 | -.1426 | -.1623 | -.1810 | -.1986 | -.2143 | -.2312 | -.2462 | -.2605 |
| -.600 | -.1424 | -.1468 | -.1510 | -.1553 | -.1635 | -.1834 | -.2021 | -.2198 | -.2365 | -.2525 | -.2676 | -.2820 |
| -.700 | -.1622 | -.1665 | -.1708 | -.1751 | -.1834 | -.2033 | -.2221 | -.2399 | -.2567 | -.2727 | -.2879 | -.3023 |
| -.800 | -.1813 | -.1856 | -.1899 | -.1942 | -.2026 | -.2226 | -.2414 | -.2593 | -.2762 | -.2922 | -.3074 | -.3220 |

TABLE III - Concluded

VALUES OF $\left(\frac{\rho_2}{\rho_0}\right)^{1/2} - \left(\frac{q_2}{q_0}\right)^{1/2}$ FOR DETERMINING POINT DRAG COEFFICIENT - Concluded

$$[M_0 = 1.00]$$

| $\frac{\Delta H}{q_0} \backslash K$ | 0 | 0.01 | 0.02 | 0.03 | 0.05 | 0.10 | 0.15 | 0.20 | 0.25 | 0.30 | 0.35 | 0.40 |
|-------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0.800 | 0.2971 | 0.2931 | 0.2892 | 0.2854 | 0.2778 | 0.2597 | 0.2426 | 0.2265 | 0.2112 | 0.1966 | 0.1828 | 0.1696 |
| .700 | .2454 | .2414 | .2375 | .2337 | .2261 | .2078 | .1906 | .1744 | .1589 | .1443 | .1303 | .1171 |
| .600 | .1999 | .1959 | .1920 | .1880 | .1804 | .1620 | .1447 | .1284 | .1128 | .0981 | .0840 | .0706 |
| .500 | .1590 | .1550 | .1510 | .1471 | .1394 | .1209 | .1034 | .0870 | .0713 | .0565 | .0423 | .0289 |
| .400 | .1219 | .1178 | .1139 | .1099 | .1022 | .0835 | .0660 | .0494 | .0337 | .0187 | .0045 | -.0090 |
| .300 | .0880 | .0839 | .0798 | .0759 | .0681 | .0494 | .0317 | .0150 | -.0008 | -.0159 | -.0302 | -.0438 |
| .250 | .0719 | .0677 | .0637 | .0597 | .0519 | .0331 | .0154 | -.0013 | -.0172 | -.0323 | -.0466 | -.0603 |
| .200 | .0565 | .0524 | .0484 | .0444 | .0365 | .0177 | -.0001 | -.0168 | -.0328 | -.0479 | -.0623 | -.0760 |
| .150 | .0415 | .0374 | .0333 | .0293 | .0215 | .0026 | -.0153 | -.0321 | -.0481 | -.0632 | -.0776 | -.0914 |
| .100 | .0273 | .0232 | .0191 | .0151 | .0072 | -.0117 | -.0296 | -.0465 | -.0625 | -.0777 | -.0921 | -.1060 |
| .075 | .0203 | .0162 | .0121 | .0081 | .0002 | -.0188 | -.0367 | -.0536 | -.0696 | -.0849 | -.0993 | -.1131 |
| .050 | .0134 | .0093 | .0052 | .0012 | -.0067 | -.0257 | -.0436 | -.0605 | -.0766 | -.0919 | -.1063 | -.1202 |
| .025 | .0066 | .0025 | -.0015 | -.0056 | -.0135 | -.0325 | -.0505 | -.0674 | -.0835 | -.0987 | -.1133 | -.1271 |
| 0 | 0 | -.0042 | -.0082 | -.0123 | -.0202 | -.0392 | -.0572 | -.0742 | -.0903 | -.1056 | -.1201 | -.1340 |
| -.025 | -.0065 | -.0106 | -.0147 | -.0188 | -.0267 | -.0458 | -.0637 | -.0808 | -.0969 | -.1122 | -.1267 | -.1406 |
| -.050 | -.0130 | -.0172 | -.0212 | -.0252 | -.0333 | -.0523 | -.0703 | -.0874 | -.1035 | -.1188 | -.1334 | -.1473 |
| -.075 | -.0194 | -.0236 | -.0277 | -.0317 | -.0397 | -.0588 | -.0768 | -.0938 | -.1100 | -.1254 | -.1400 | -.1539 |
| -.100 | -.0256 | -.0298 | -.0339 | -.0379 | -.0459 | -.0650 | -.0831 | -.1002 | -.1164 | -.1317 | -.1463 | -.1603 |
| -.150 | -.0376 | -.0418 | -.0459 | -.0500 | -.0580 | -.0772 | -.0952 | -.1123 | -.1286 | -.1440 | -.1587 | -.1726 |
| -.200 | -.0498 | -.0540 | -.0581 | -.0622 | -.0702 | -.0894 | -.1075 | -.1247 | -.1410 | -.1564 | -.1711 | -.1851 |
| -.250 | -.0614 | -.0655 | -.0697 | -.0738 | -.0818 | -.1012 | -.1193 | -.1365 | -.1528 | -.1683 | -.1830 | -.1971 |
| -.300 | -.0726 | -.0768 | -.0809 | -.0850 | -.0931 | -.1124 | -.1306 | -.1479 | -.1642 | -.1797 | -.1945 | -.2086 |
| -.400 | -.0942 | -.0984 | -.1026 | -.1067 | -.1148 | -.1342 | -.1525 | -.1699 | -.1863 | -.2018 | -.2167 | -.2308 |
| -.500 | -.1148 | -.1194 | -.1232 | -.1273 | -.1359 | -.1550 | -.1734 | -.1908 | -.2073 | -.2229 | -.2379 | -.2520 |
| -.600 | -.1344 | -.1386 | -.1428 | -.1470 | -.1551 | -.1747 | -.1932 | -.2107 | -.2273 | -.2430 | -.2580 | -.2722 |
| -.700 | -.1531 | -.1573 | -.1616 | -.1658 | -.1739 | -.1936 | -.2122 | -.2297 | -.2463 | -.2622 | -.2772 | -.2915 |
| -.800 | -.1711 | -.1754 | -.1796 | -.1838 | -.1920 | -.2118 | -.2304 | -.2481 | -.2648 | -.2806 | -.2957 | -.3101 |

TABLE IV
 F_c AS A FUNCTION OF $\frac{H-p}{p}$

| $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c | $\frac{H-p}{p}$ | F_c |
|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|-----------------|---------|
| 0.01 | 1.00352 | 0.37 | 1.12311 | 0.74 | 1.23301 | 1.10 | 1.33103 | 1.46 | 1.42230 | 1.81 | 1.50601 | 2.15 | 1.58344 |
| .02 | 1.00706 | .38 | 1.12636 | .75 | 1.23573 | 1.11 | 1.33366 | 1.47 | 1.42478 | 1.82 | 1.50833 | 2.16 | 1.58560 |
| .03 | 1.01064 | .39 | 1.12945 | .76 | 1.23865 | 1.12 | 1.33627 | 1.48 | 1.42721 | 1.83 | 1.51061 | 2.17 | 1.58787 |
| .04 | 1.01418 | .40 | 1.13256 | .77 | 1.24138 | 1.13 | 1.33885 | 1.49 | 1.42964 | 1.84 | 1.51299 | 2.18 | 1.59008 |
| .05 | 1.01779 | .41 | 1.13555 | .78 | 1.24423 | 1.14 | 1.34159 | 1.50 | 1.43209 | 1.85 | 1.51535 | 2.19 | 1.59229 |
| .06 | 1.02081 | .42 | 1.13862 | .79 | 1.24696 | 1.15 | 1.34407 | 1.51 | 1.43452 | 1.86 | 1.51763 | 2.20 | 1.59448 |
| .07 | 1.02456 | .43 | 1.14175 | .80 | 1.25005 | 1.16 | 1.34665 | 1.52 | 1.43697 | 1.87 | 1.51997 | 2.21 | 1.59675 |
| .08 | 1.02832 | .44 | 1.14489 | .81 | 1.25275 | 1.17 | 1.34921 | 1.53 | 1.43939 | 1.88 | 1.52225 | 2.22 | 1.59894 |
| .09 | 1.03166 | .45 | 1.14788 | .82 | 1.25548 | 1.18 | 1.35182 | 1.54 | 1.44186 | 1.89 | 1.52450 | 2.23 | 1.60112 |
| .10 | 1.03512 | .46 | 1.15102 | .83 | 1.25831 | 1.19 | 1.35438 | 1.55 | 1.44428 | 1.90 | 1.52687 | 2.24 | 1.60333 |
| .11 | 1.03839 | .47 | 1.15386 | .84 | 1.26112 | 1.20 | 1.35696 | 1.56 | 1.44667 | 1.91 | 1.52913 | 2.25 | 1.60553 |
| .12 | 1.04189 | .48 | 1.15700 | .85 | 1.26386 | 1.21 | 1.35953 | 1.57 | 1.44909 | 1.92 | 1.53141 | 2.26 | 1.60774 |
| .13 | 1.04528 | .49 | 1.15994 | .86 | 1.26656 | 1.22 | 1.36206 | 1.58 | 1.45151 | 1.93 | 1.53377 | 2.27 | 1.60994 |
| .14 | 1.04872 | .50 | 1.16302 | .87 | 1.26932 | 1.23 | 1.36463 | 1.59 | 1.45390 | 1.94 | 1.53602 | 2.28 | 1.61215 |
| .15 | 1.05199 | .51 | 1.16600 | .88 | 1.27203 | 1.24 | 1.36720 | 1.60 | 1.45629 | 1.95 | 1.53832 | 2.29 | 1.61430 |
| .16 | 1.05536 | .52 | 1.16894 | .89 | 1.27478 | 1.25 | 1.36977 | 1.61 | 1.45873 | 1.96 | 1.54059 | 2.30 | 1.61649 |
| .17 | 1.05855 | .53 | 1.17203 | .90 | 1.27755 | 1.26 | 1.37228 | 1.62 | 1.46102 | 1.97 | 1.54283 | 2.35 | 1.62741 |
| .18 | 1.06188 | .54 | 1.17498 | .91 | 1.28029 | 1.27 | 1.37487 | 1.63 | 1.46352 | 1.98 | 1.54518 | 2.40 | 1.63823 |
| .19 | 1.06528 | .55 | 1.17786 | .92 | 1.28295 | 1.28 | 1.37741 | 1.64 | 1.46591 | 1.99 | 1.54745 | 2.45 | 1.64899 |
| .20 | 1.06855 | .56 | 1.18094 | .93 | 1.28570 | 1.29 | 1.37992 | 1.65 | 1.46830 | 2.00 | 1.54969 | 2.50 | 1.65970 |
| .21 | 1.07195 | .57 | 1.18385 | .94 | 1.28839 | 1.30 | 1.38246 | 1.66 | 1.46068 | 2.01 | 1.55200 | 2.55 | 1.67040 |
| .22 | 1.07518 | .58 | 1.18681 | .95 | 1.29112 | 1.31 | 1.38502 | 1.67 | 1.47306 | 2.02 | 1.55421 | 2.60 | 1.68100 |
| .23 | 1.07836 | .59 | 1.18979 | .96 | 1.29379 | 1.32 | 1.38750 | 1.68 | 1.47546 | 2.03 | 1.55652 | 2.65 | 1.69146 |
| .24 | 1.08177 | .60 | 1.19379 | .97 | 1.29652 | 1.33 | 1.38997 | 1.69 | 1.47789 | 2.04 | 1.55872 | 2.70 | 1.70199 |
| .25 | 1.08501 | .61 | 1.19575 | .98 | 1.29927 | 1.34 | 1.39254 | 1.70 | 1.48019 | 2.05 | 1.56098 | 2.75 | 1.71239 |
| .26 | 1.08826 | .62 | 1.19851 | .99 | 1.30186 | 1.35 | 1.39504 | 1.71 | 1.48256 | 2.06 | 1.56328 | 2.80 | 1.72271 |
| .27 | 1.09143 | .63 | 1.20144 | 1.00 | 1.30456 | 1.36 | 1.39750 | 1.72 | 1.48491 | 2.07 | 1.56549 | 2.85 | 1.73305 |
| .28 | 1.09473 | .64 | 1.20437 | 1.01 | 1.30723 | 1.37 | 1.40000 | 1.73 | 1.48728 | 2.08 | 1.56778 | 2.90 | 1.74339 |
| .29 | 1.09782 | .65 | 1.20723 | 1.02 | 1.30989 | 1.38 | 1.40254 | 1.74 | 1.48962 | 2.09 | 1.57004 | 2.95 | 1.75357 |
| .30 | 1.10112 | .66 | 1.21014 | 1.03 | 1.31253 | 1.39 | 1.40497 | 1.75 | 1.49199 | 2.10 | 1.57222 | 3.00 | 1.76374 |
| .31 | 1.10426 | .67 | 1.21301 | 1.04 | 1.31519 | 1.40 | 1.40749 | 1.76 | 1.49431 | 2.11 | 1.57453 | 3.05 | 1.77380 |
| .32 | 1.10748 | .68 | 1.21589 | 1.05 | 1.31789 | 1.41 | 1.40998 | 1.77 | 1.49664 | 2.12 | 1.57671 | 3.10 | 1.78383 |
| .33 | 1.11048 | .69 | 1.21877 | 1.06 | 1.32047 | 1.42 | 1.41241 | 1.78 | 1.49900 | 2.13 | 1.57892 | 3.15 | 1.79389 |
| .34 | 1.11369 | .70 | 1.22162 | 1.07 | 1.32316 | 1.43 | 1.41489 | 1.79 | 1.50132 | 2.14 | 1.58120 | 3.20 | 1.80389 |
| .35 | 1.11692 | .71 | 1.22445 | 1.08 | 1.32576 | 1.44 | 1.41739 | 1.80 | 1.50370 | | | 3.25 | 1.81379 |
| .36 | 1.12010 | .72 | 1.22728 | 1.09 | 1.32838 | 1.45 | 1.41987 | | | | | | |
| | | .73 | 1.23013 | | | | | | | | | | |

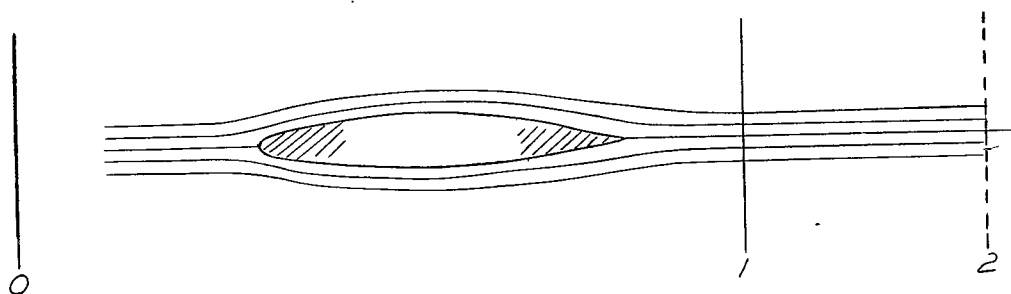
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TABLE V

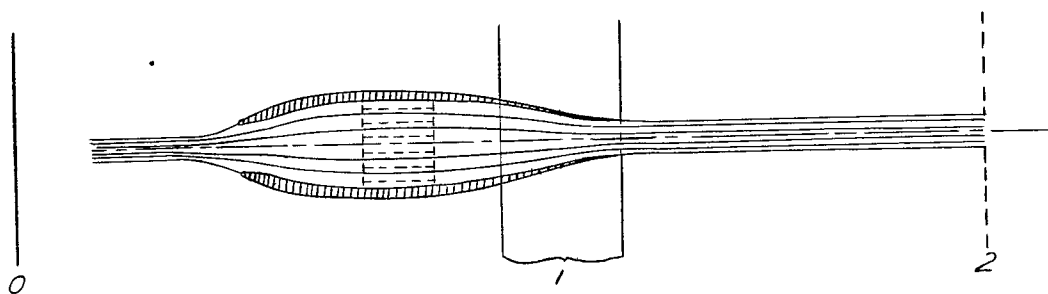
M AS A FUNCTION OF p/H

| M | p/H | M | p/H | M | p/H |
|------|--------|-------|--------|-------|--------|
| 0 | 1 | 0.325 | 0.9295 | 0.675 | 0.7370 |
| .01 | .99993 | .34 | .9231 | .68 | .7338 |
| .025 | .9999 | .35 | .9188 | .69 | .7274 |
| .03 | .9994 | .36 | .9143 | .70 | .7209 |
| .04 | .9989 | .375 | .9075 | .71 | .7145 |
| .05 | .9982 | .38 | .9052 | .72 | .7080 |
| .06 | .9974 | .39 | .9002 | .725 | .7049 |
| .075 | .9960 | .40 | .8956 | .74 | .6951 |
| .08 | .9955 | .41 | .8907 | .75 | .6886 |
| .09 | .9944 | .42 | .8857 | .76 | .6821 |
| .10 | .9930 | .425 | .8832 | .775 | .6724 |
| .11 | .9916 | .44 | .8755 | .78 | .6691 |
| .12 | .9900 | .45 | .8702 | .79 | .6625 |
| .125 | .9892 | .46 | .8650 | .80 | .6560 |
| .13 | .9883 | .475 | .8570 | .81 | .6495 |
| .14 | .9864 | .48 | .8541 | .82 | .6431 |
| .15 | .9844 | .49 | .8486 | .825 | .6398 |
| .16 | .9823 | .50 | .8430 | .84 | .6300 |
| .175 | .9790 | .51 | .8374 | .85 | .6235 |
| .18 | .9777 | .52 | .8316 | .86 | .6170 |
| .19 | .9751 | .525 | .8288 | .875 | .6074 |
| .20 | .9725 | .54 | .8200 | .88 | .6041 |
| .21 | .9697 | .55 | .8141 | .89 | .5977 |
| .22 | .9668 | .56 | .8082 | .90 | .5913 |
| .225 | .9654 | .575 | .7993 | .91 | .5849 |
| .24 | .9605 | .58 | .7962 | .92 | .5785 |
| .25 | .9575 | .59 | .7901 | .925 | .5753 |
| .26 | .9541 | .60 | .7840 | .94 | .5658 |
| .275 | .9489 | .61 | .7779 | .95 | .5595 |
| .28 | .9472 | .62 | .7716 | .96 | .5532 |
| .29 | .9433 | .625 | .7686 | .975 | .5438 |
| .30 | .9395 | .64 | .7591 | .98 | .5407 |
| .31 | .9355 | .65 | .7528 | .99 | .5345 |
| .32 | .9315 | .66 | .7465 | 1.00 | .5283 |

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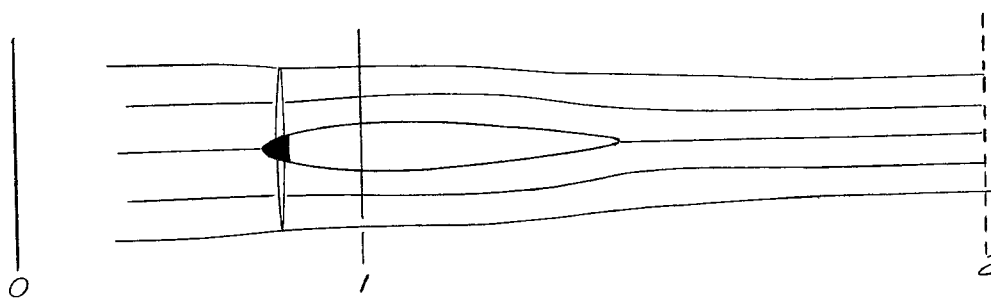


(a) For measurement of profile drag.



(b) For measurement of internal drag or thrust.

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(c) For measurement of propeller thrust.

Figure 1. - Station designations.

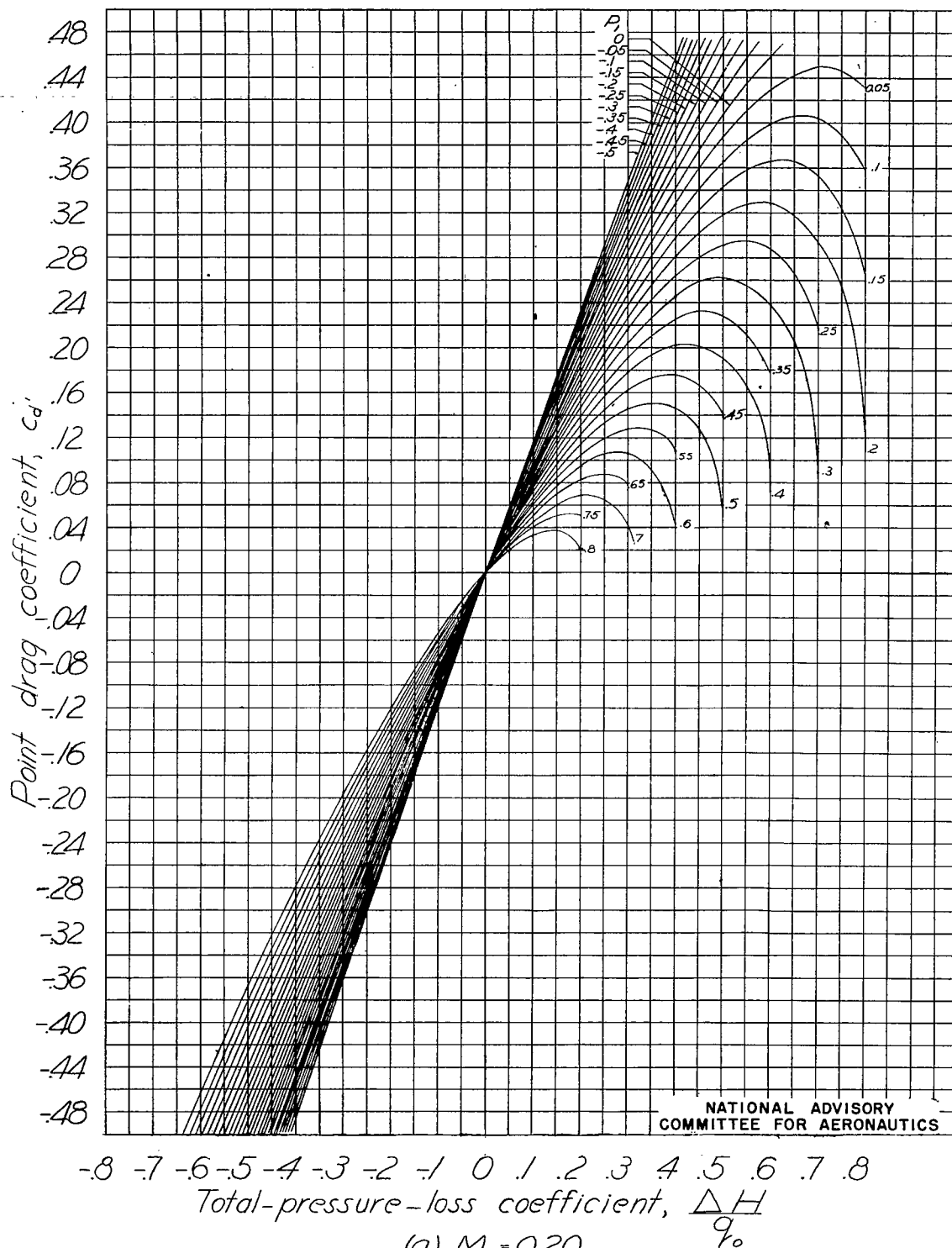
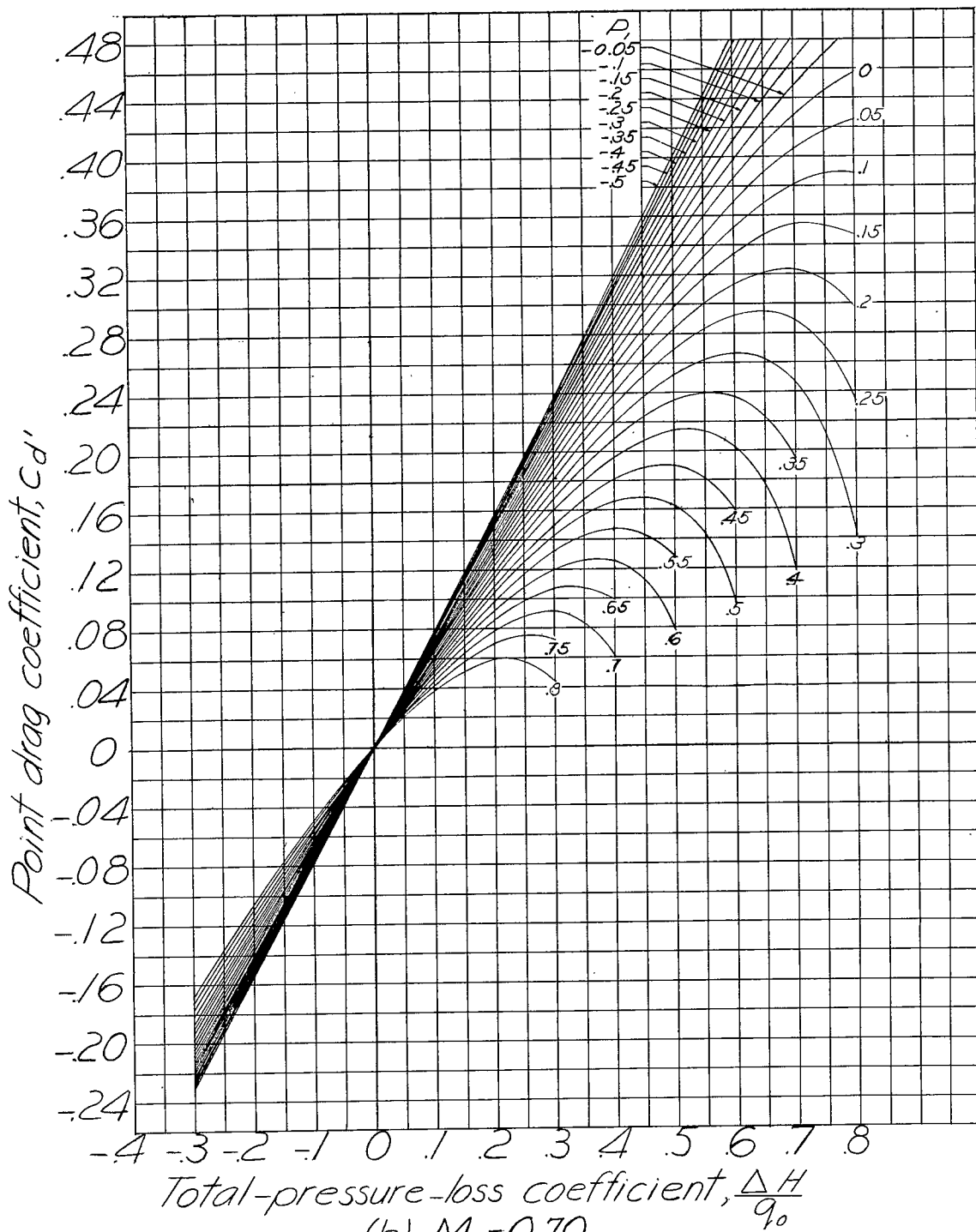


Figure 2.—Point drag coefficient from table I for isoenergetic flow.

Fig. 2b

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(b) $M_0 = 0.70$.

Figure 2.- Concluded.

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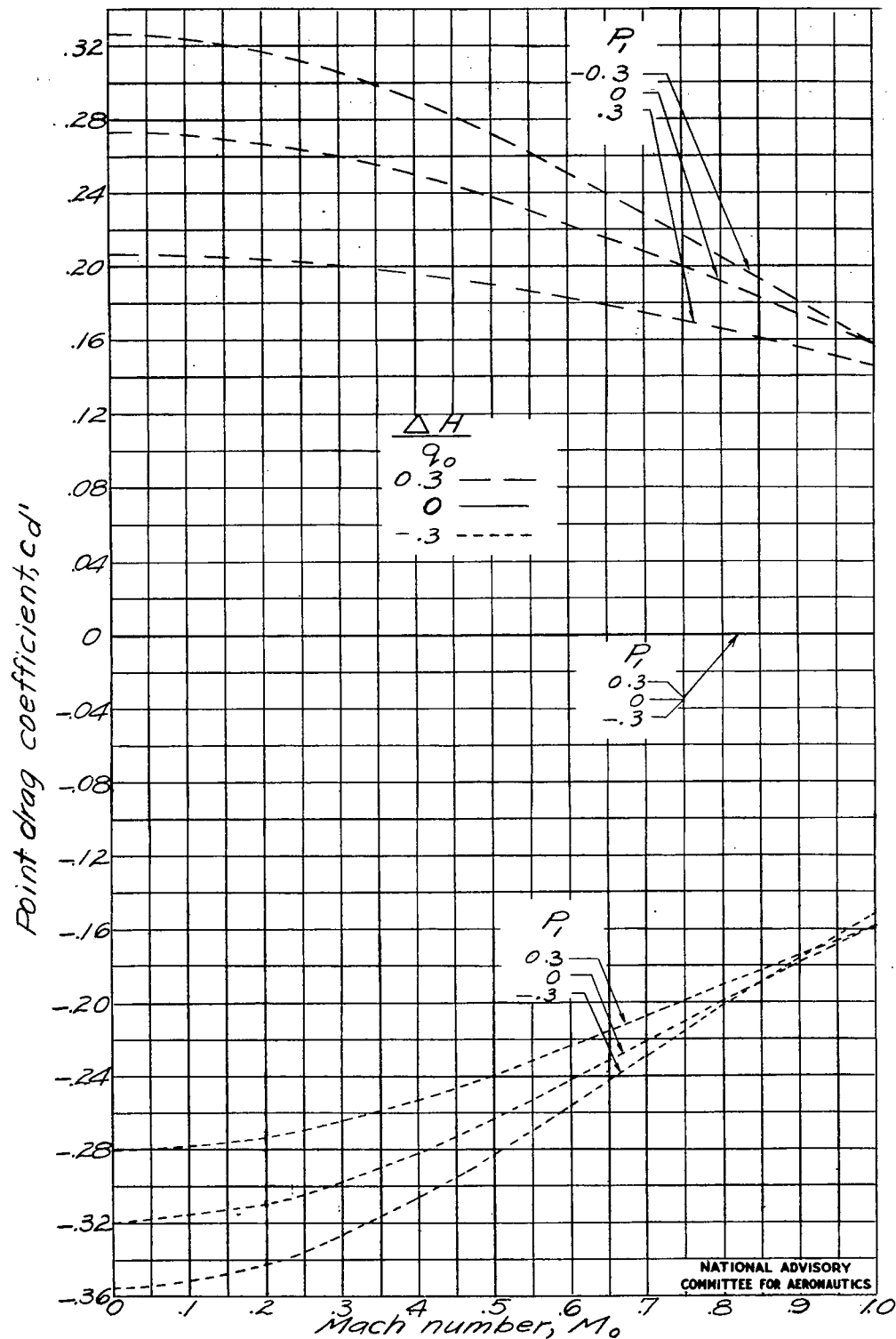


Figure 3. - Variation of point drag coefficient with Mach number for isoenergetic flow.

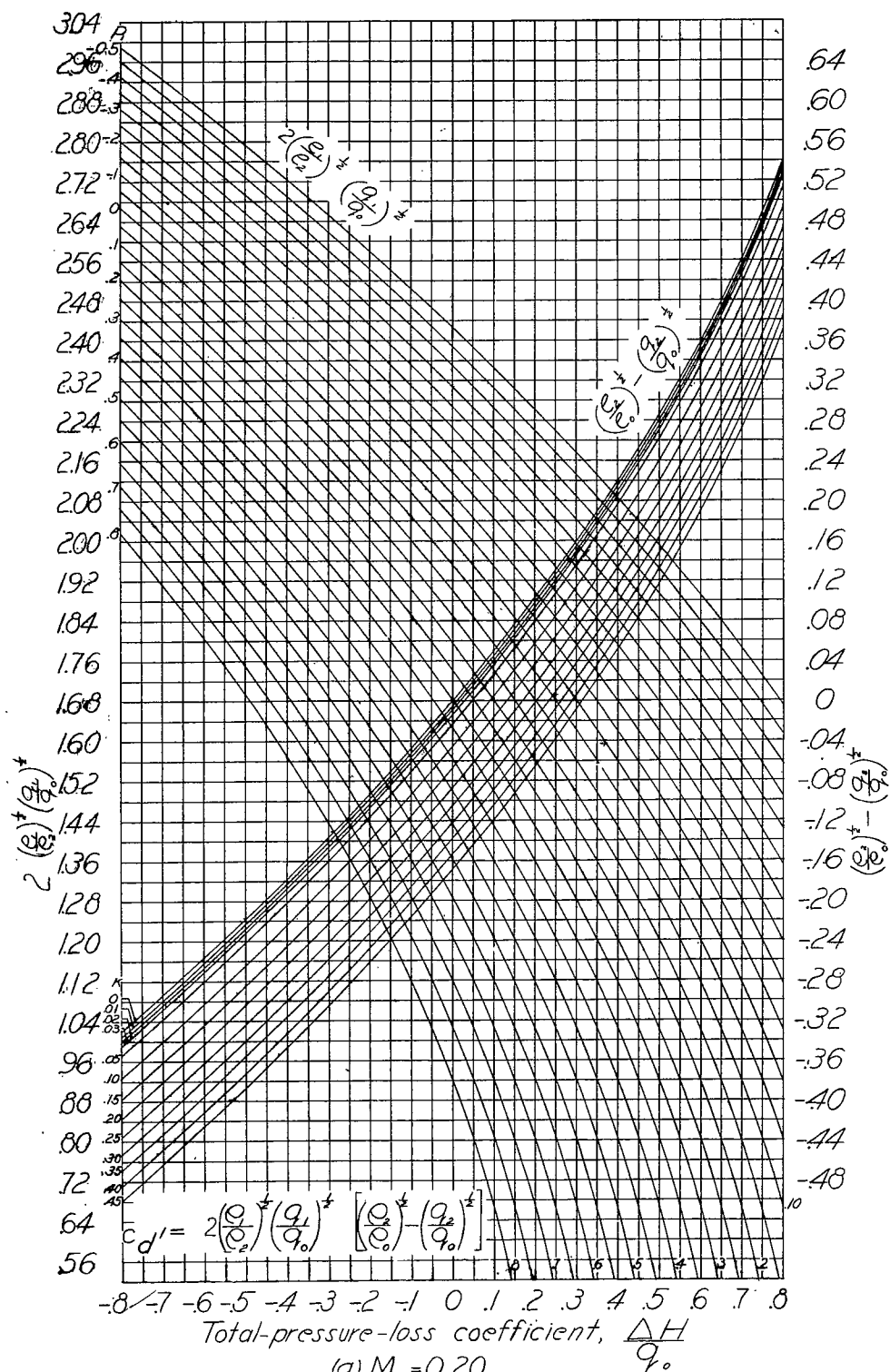


Figure 4. Point drag coefficient from Table II for flows wherein energy is added.

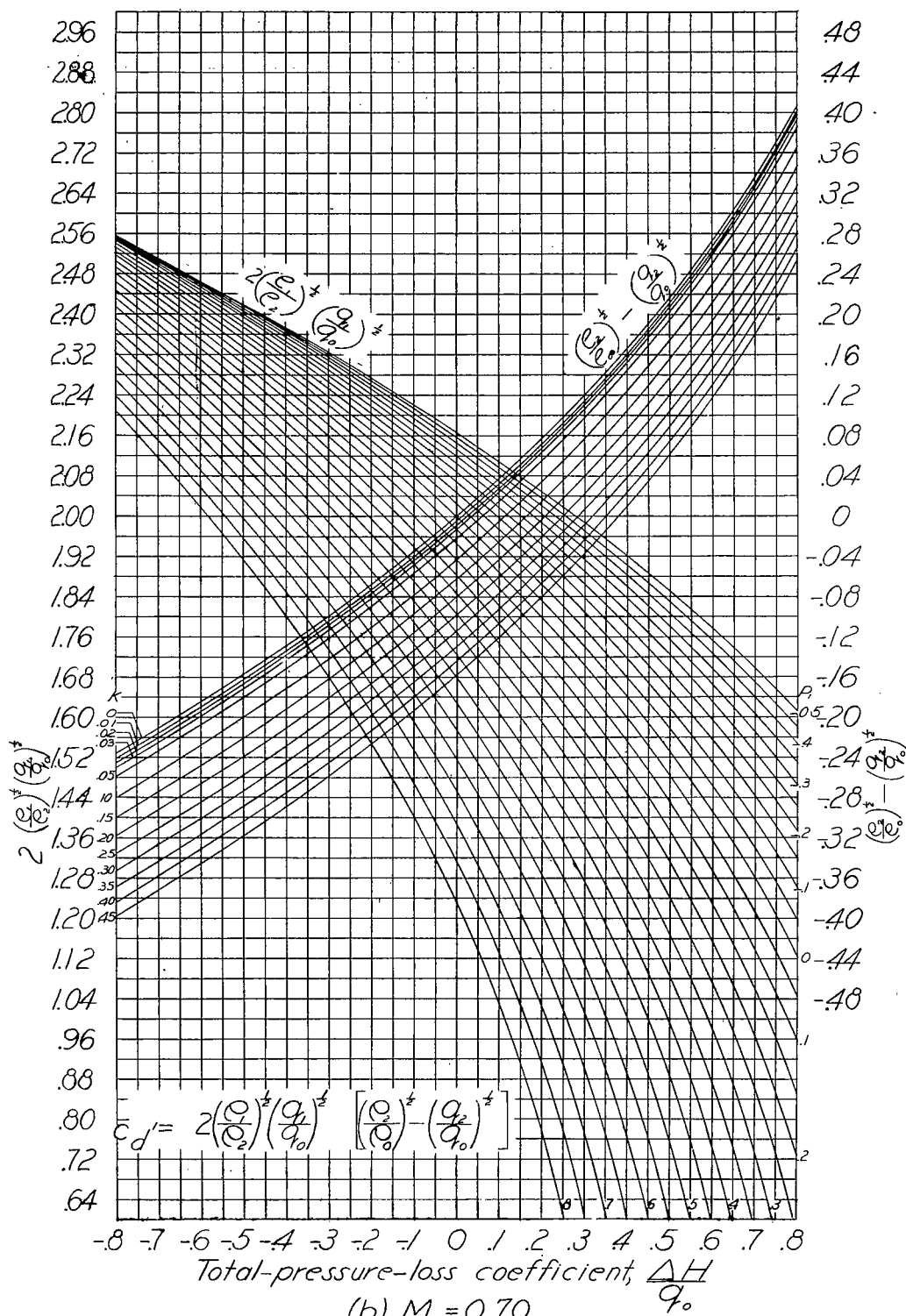


Figure 4.- Concluded.

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